



RHODES UNIVERSITY

Where leaders learn

RESEARCH REPORT

2023





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2023

RHODES UNIVERSITY

Research Report

A publication of the Rhodes University Research Office, compiled and edited by **Jaine Roberts**, **Thumeka Mantolo** and **Anela Nzwanga**.

RESEARCH OFFICE:

Director: Jaine Roberts

email: j.roberts@ru.ac.za

tel: +27 (0)46 603 8756/7572

www.ru.ac.za

COVER PHOTO:

Rhodes University's Professor Kenneth Ngcoza has described growing up in Victoria Road, Fingo Village and how, at that time, Rhodes University was the unattainable citadel as it "gleamed in the morning light".

Our Cover feature for 2023 focuses on our Community Engagement Division and Engaged Research.

Photo: Chris Marais.

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Vice-Chancellor

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RHODES UNIVERSITY RESEARCH REPORT Foreword



Professor Sizwe Mabizela
Vice-Chancellor

Introduction

Our university continues to be a formidable powerhouse of research, innovation and intellectual creativity. Our intellectual space continues to be our strength as we endeavour to make our contribution to local, national, continental and international solutions to some of the daunting challenges of our time. Our researchers continue to produce path-breaking research and creative outputs which expand the frontiers of knowledge and propel humanity forward; knowledge which contributes to the improvement of the quality of life, the advancement of sustainable development and the deepening of human understanding and wisdom.

Following the retirement of **Professor Peter Clayton** after 40 years of service to Rhodes University, **Professor Joanna Dames** served as the Interim Deputy Vice-Chancellor: Research, Innovation & Strategic Partnerships for the first semester of 2023. Professor Dames did not just keep the DVC seat warm for her successor but fully discharged the duties of the office without any inhibition or restraint. We are immensely indebted to her for serving our university with such commitment and dedication. In July 2023, **Dr Nomakwezi (Kwezi) Mzilikazi**, an accomplished researcher, scholar and a great leader succeeded Professor Dames. We take much delight in welcoming Dr Mzilikazi to Rhodes University. She brings with her substantial experience, knowledge and leadership acumen that will take us to the next phase of growth and development in pursuit of our academic vision, mission, and purpose. Dr Mzilikazi will drive the university's research and innovation strategic goals and objectives, lead initiatives and efforts to ensure Postgraduate student support and growth and enhance the university's partnerships with other institutions and organisations to advance the university's research impact.



Professor Jo Dames

Acting Deputy Vice-Chancellor: Research & Innovation
(January - June 2023)

We look forward to her contribution to Rhodes University as we further consolidate our place as a distinct and distinctive institution of higher learning that is locally responsive and globally engaged.

The year 2023 marks the beginning of our implementation of our new strategic navigational policy document, the Institutional Development Plan 2023 - 2028 (IDP Umkhombandlela). We are determined to advance strategically from our current position of strength and achievement to one of a leading national research-intensive university that is able to enhance its impactful contribution for the betterment of humanity and achievement of inclusive and sustainable development. Through the IDP, our university has committed itself to tackle local problems in ways that command attention and respect globally, advancing social justice as well as advancing the public good to realise the purpose of higher education.

Our university is also deliberate about strengthening its position as a research-intensive university and pursuing a strong Postgraduate trajectory remains our highest priority. We aim for a high proportion of Postgraduate students to be our distinguishing character among all the higher education institutions in South Africa.

In this report, we showcase community engagement and engaged research, a unique value proposition of Rhodes University research which has become increasingly important in addressing and solving local problems and is one of the most effective pathways to impact. We are immensely proud of the considerable progress Rhodes University has made over the years to integrate and embed community engagement in the overall mission and purpose of our university. We start from the premise that meaningful and productive community engagement is predicated on building collaborative, mutually beneficial, inclusive, equitable, participatory and knowledge-driven partnerships based on mutual respect and reciprocity. Through community engagement and engaged research we are able to work with our surrounding community to identify local challenges and co-create solutions to these, while simultaneously contributing to, and enriching, our accumulated global stock of knowledge from our vantage point.

Our university acknowledges and celebrates outstanding achievements of staff who have raised the scholarly standing of our university through the award of the Vice-Chancellor's Distinguished Awards. This report profiles the recipients of the 2023 Vice-Chancellor's Distinguished Research Award, **Professor Julie Coetzee**, and the Vice-Chancellor's Distinguished Book Award which was awarded to **Associate Professor Siphokazi Magadla's** book *Guerrillas and Combative Mothers. Women and the Armed Struggle in South Africa* (2023, University of Kwazulu-Natal Press).



Dr Kwezi Mzilikazi

Deputy Vice-Chancellor: Research, Innovation and Strategic Partnerships



Jaine Roberts

Director: Research & Innovation



Thumeka Mantolo

Publication Count Manager

This report also places a spotlight on the deeply impactful work conducted by our esteemed research chairs. Rhodes University has the highest number of research chairs per capita in the South African National System of Innovation.

The research chairs have continued to make an invaluable contribution in the research and innovation endeavours of our university. Some have been reviewed and renewed and upgraded to Tier 1. This is most heart-warming and an affirmation of the crucial role that our research chair holders play in the national research and innovation project.

Many of our outstanding scholars attracted external acclaim during the year under review and received widespread national and international acknowledgement of their work. Their fine accomplishments are contained within the pages of this report. Our congratulations and appreciation are extended to all our scholars, Postgraduate supervisors, partners, funders, and donors, who contributed to making 2023 a year in which research continued to flourish at Rhodes University. Your expertise, integrity, dedication, rigour and generosity make Rhodes University a rich and distinctive intellectual space.

Professor Sizwe Mabizela
Vice-Chancellor

RHODES UNIVERSITY

Top 30 Researchers

Rhodes University acknowledges and congratulates the following for their accredited research outputs (Journal Publications, Books and Chapters, and Masters/Doctoral students graduated) in 2023:

- 1. Distinguished Professor Tebello Nyokong**
Department of Chemistry, Rhodes/DST Institute for Nanotechnology Innovation
- 2. Professor Adrienne Edkins**
Department of Biochemistry, Microbiology and Bioinformatics
- 3. Distinguished Professor Charlie Shackleton**
Department of Environmental Sciences
- 4. Associate Professor Dane Brown**
Department of Computer Science
- 5. Professor Özlem Tastan Bishop**
Department of Biochemistry, Microbiology and Bioinformatics
- 6. Dr Clement Simuja**
Faculty of Education, Department of Secondary and Post-School Education
- 7. Professor Roman Tandlich**
Faculty of Pharmacy
- 8. Distinguished Professor Oleg Smirnov**
Department of Physics
- 9. Professor Joanna Dames**
Department of Biochemistry, Microbiology and Bioinformatics
- 10. Professor Ryan John Wasserman**
Department of Zoology and Entomology
- 11. Distinguished Professor Martin Hill**
Department of Zoology and Entomology, Centre for Biological Control
- 12. Distinguished Professor Heila Lotz-Sisitka**
Department of Education, Secondary and Post-School Education
- 13. Dr Wilbert Kadye**
Department of Ichthyology and Fisheries Science
- 14. Professor Cliff Jones**
Department of Ichthyology and Fisheries Science
- 15. Professor John Mack**
Department of Chemistry, Rhodes/DST Institute for Nanotechnology Innovation
- 16. Associate Professor Kevin Lobb**
Department of Chemistry
- 17. Associate Professor Siphokazi Magadla**
Department of Political and International Studies
- 18. Associate Professor Philani Mashazi**
Department of Chemistry, Rhodes/DST Institute for Nanotechnology Innovation
- 19. Professor Ruth Simbao**
Department of Fine Art
- 20. Distinguished Professor Catriona Macleod**
Department of Psychology
- 21. Professor Dion Nkomo**
School of Languages and Literatures
- 22. Dr Ian Sieborger**
Department of Linguistics and Applied Language Studies
- 23. Associate Professor Nelson Odume**
Institute for Water Research
- 24. Associate Professor Juniors Marire**
Department of Economics
- 25. Associate Professor Iain Paterson**
Department of Zoology and Entomology
- 26. Professor Mellony Graven**
Faculty of Education, Department of Primary and Early Childhood Education
- 27. Dr Marcellin Atemkeng**
Department of Mathematics (Pure and Applied)
- 28. Professor Pedro Tabensky**
Department of Philosophy, Allan Gray Centre for Leadership Ethics
- 29. Professor Arthur Mukenge**
School of Languages and Literatures
- 30. Dr Rethabile Mawela**
Institute for the Study of the Englishes of Africa (ISEA)

Distinguished Professor Tebello Nyokong



RHODES UNIVERSITY

PhD Graduates

PhD Graduates 2023

Faculty of Commerce (5 PhDs)

Degree of Doctor of Philosophy

DRUMMOND, Fiona Jane, BAHons, MCom (Rhodes), in Economics, in the Department of Economics and Economic History. Degree by thesis. Thesis: *The adaptation of non-standard labour markets and their spatial distribution: The effects and legacies of COVID-19 on South Africa's freelance creative workers.*

Supervisor: Professor JD Snowball.

MAQANDA, Vuyani, MSc (UFH), MCom (Unisa), in Economics, in the Department of Economics and Economic History. Degree by thesis. Thesis: *Electricity demand and supply in South Africa: Is nuclear energy a feasible alternative to coal for baseload energy provision in South Africa?*

Supervisor: Professor JD Snowball.

Co-supervisor: Professor GR Keeton.

NDALAMA, Jewel Stebbins, MA (Malawi), in Economics, in the Department of Economics and Economic History. Degree by thesis. Thesis: *Foreign aid mix and manufactured exports performance in Sub-Saharan Africa.*

Supervisor: Professor J Marire.

SHA, Shafeek, MCom (Rhodes), in Management, in the Department of Management. Degree by thesis. Thesis: *A critical analysis of the factors influencing knowledge sharing in Indian family-owned businesses in South Africa.*

Supervisor: Professor CM Adendorff.

WILLIAMS, Alyssa Shawntay, MCom (Rhodes), in Management, in the Department of Management. Degree by thesis. Thesis: *The influence of electronic-consumer experience (e-CX) on consumer post purchase outcomes of South African e-commerce retail organisations.*

Supervisor: Professor N Oosthuizen.

Faculty of Education (14 PhDs)

Degree of Doctor of Philosophy

ADAMS, Anthea, MA (UWC), in Education, in the Centre for Higher Education Research, Teaching and Learning. Degree by thesis. Thesis: *A social realist analysis of the professional identity formation of lecturers emerging from completing professional development at a South African research-intensive University.*

Supervisor: Professor JE Vorster.

Co-supervisor: Professor SL Hassan (UWC).

CHIMBODZA, Iris Jane Mary, MEd (Zimbabwe), in Education, in the Department of Primary and Early Childhood Education. Degree by thesis. Thesis: *The emergence of Education for Sustainable Development teacher competences amongst pre-service teachers in a Geography Teacher Education Programme in Zimbabwe.*

Supervisor: Professor I Schudel.

DWAYI, Valindawo Medicine, BA (Transkei), BAHons (RAU), MCom (Natal), in Education, in the Centre for Higher Education Research, Teaching and Learning. Degree by thesis. Thesis: *A social realist account of the way academic managers exercise agency in monitoring students' academic success in South African Higher Education.*

Supervisor: Professor Emeritus CM Boughey.

HAIMENE, Johanna Shetulimba, Dip (Education) (UNAM), MEd (Rhodes), in Education, in the Department of Secondary and Post School Education. Degree by thesis. Thesis: *Exploring and expanding teachers' gender and culturally responsive practices when mediating learning of Chemistry in rural schools in Namibia.*

Supervisor: Professor Emeritus KM Ngcoza.

Co-supervisors: Dr C Chikunda (AWARD) and Dr Z Nhase (UFS).

KUSE, Mzukisi, BSc (Rhodes), MSc (Pretoria), in Education, in the Department of Secondary and Post School Education. Degree by thesis. Thesis: *Exploring expansive learning and co-management in the uMzimvumbu catchment*.

Supervisor: Distinguished Professor H Lotz-Sisitka.

MADIBA, Morakane Stephinah, BScHons (Wits), MEd (Rhodes), in Education, in the Department of Secondary and Post-School Education. Degree by thesis. Thesis: *Realist evaluation cases of the uptake and use of citizen science tools for water quality management: Vaal-Triangle public primary schools' teachers and Mpophomeni enviro-champs*.

Supervisor: Distinguished Professor H Lotz-Sisitka.

MARTIN, Aaniyah, MSc (UCT), in Education, in the Department of Secondary and Post-School Education. Degree by thesis. Thesis: *Co-creating a pedagogy of care for our hydrocommons in South Africa*.

Supervisor: Dr D McGarry.

Co-supervisor: Professor V Bozalek (UWC).

MATENGU, Given Kahale, AdvDip (Education) (UNAM), MEd (Rhodes), in Education, in the Department of Secondary and Post-School Education. Degree by thesis. Thesis: *Teachers' use of authentic tasks through mathematics trails in a mobile learning environment to facilitate conceptual teaching*.

Supervisor: Professor M Schäfer.

MUHANGI, Sidney, BBA (Makerere), BComHons (Rhodes), MSc (Nottingham Trent), in Education, in the Department of Secondary and Post School Education. Degree by thesis. Thesis: *Investigating occupation as frame for planning and developing Agricultural extension VET skills for climate resilience: Cross-case analysis of Alice, South Africa, and Gulu, Uganda*.

Supervisor: Distinguished Professor H Lotz-Sisitka.

Co-supervisor: Dr P Ramsarup (Wits).

MWATUNGA, Carina Brigitte, BSc (LMU), BA Hons (NMMU), MA (NMMU), in Education, in the Centre for Higher Education Research, Teaching and Learning. Degree by thesis. Thesis: *A capabilities analysis: Degree mobility and the impact of returning South African alumni on their home country's sustainable development*.

Supervisor: Dr A Hlengwa.

NEKONDO, Linus Vaakohambo, MEd (Rhodes), in Education, in the Centre for Higher Education Research, Teaching and Learning. Degree by thesis. Thesis: *The role of academic literacy courses in students' disciplinary knowledge-building: A case study of a Namibian University*.

Supervisor: Professor SM McKenna.

NGHIKEMBUA, Anneli Ndapanda, BEd (UNAM), MA (Rhodes), in Education, in the Centre for Higher Education Research, Teaching and Learning. Degree by thesis. Thesis: *The role of students in internal quality assurance: A case study of Namibian institutions of Higher Education*.

Supervisor: Professor CM Boughey.

NYIRENDA, Ishmael Kamtagwala, MITCC (Mzuzu), in Education, in the Department of Secondary and Post-School Education. Degree by thesis. Thesis: *Exploring first year medical students' use of mobile learning to support their self-regulated learning in a developing country*.

Supervisor: Dr C Simuja.

Co-supervisor: Professor K Ngcoza.

SHAMBARE, Brian, BSc (Midlands State), PG Dip (Education) (Unisa), MEd (Rhodes), in Education, in the Department of Secondary and Post-School Education. Degree by thesis. Thesis: *Technological pedagogical content knowledge: An examination of rural secondary school Life Sciences teachers' integration of technology in Eastern Cape Province*.

Supervisor: Dr C Simuja.

Co-supervisor: Professor K Ngcoza.

Faculty of Humanities (22 PhDs)

Degree of Doctor of Philosophy

BILATYI, Katy Nomthandazo, BAEd (Vista), BAHons (Unisa), MA (NMMU), in African Language Studies, in the School of Languages and Literatures. Degree by thesis. Thesis: *The intellectual responsibility of women in challenging domination and abuse: The analysis of the isiXhosa sampled texts authored by women (1976-2015)*.

Supervisor: Professor N Saule.

CHAUNZA, Garikai, BA (Zimbabwe Open), MSc (Midlands State), in Journalism & Media Studies, in the School of Journalism and Media Studies. Degree by thesis. Thesis: *Activist radio and the struggle to empower audiences: A case study of the Zimbabwean history*.

Supervisor: Dr J du Toit.

CHINOMONA, Perpetua, MSocSci (Rhodes), in Sociology, in the Department of Sociology. Degree by thesis. Thesis: *A comparative analysis of land, labour and gender in a communal area and fast track farm in Zvimba rural district, Zimbabwe*.

Supervisor: Professor KD Helliker.

FOOTE, Tamlyn Lou-Ann, BEd (UKZN), BA (Unisa), BAHons (NMMU), MA (Rhodes), in Psychology, in the Department of Psychology. Degree by thesis. Thesis: *Togetherness, care and exclusion: Adolescents' experiences of living with a disabled sibling in a South African context*.

Supervisor: Professor L Saville Young.

FOUTEN, Elron Steve, MA (UWC), in Psychology, in the Department of Psychology. Degree by thesis. Thesis: *Examining the direct and indirect effect that individual and contextual risk factors have in predicting substance abuse*.

Supervisor: Professor CS Young.

FOX, Peta Ann, MA (Rhodes), in Ancient Greek, in the School of Languages and Literatures. Degree by thesis. Thesis: A

house accursed: Reconsidering Sophocles' sisters, Antigone & Ismene.

Supervisor: Dr D Malamis.

GHAMMAZ, Hamzah Saleh Theyab, BA (Mutah), MA (Jordan), in English Language and Linguistics, in the Department of Linguistics and Applied Language Studies. Degree by thesis. Thesis: *Case in Modern Standard Arabic.*

Supervisor: Professor MA de Vos.

Co-supervisor: Professor R Simango.

GROBBELAAR, Binjun, LLB (Southwest), MA (Wits), in Art History, in the Department of Fine Art. Degree by thesis. Thesis: *Border crossing, collecting, gravitating: Small narratives of three ordinary collectors in the Chinese diaspora in South Africa since the late 1980s.*

Supervisor: Professor R Simbao.

JACK, Nandipha Nomgcobo, BAHons (Transkei), MA (Stell), in African Language Studies, in the School of Languages and Literatures. Degree by thesis. Thesis: *Challenges faced in language policy implementation at Walter Sisulu University (WSU).*

Supervisor: Dr H Kunju.

Co-supervisor: Professor RH Kaschula (UWC).

MATHEKGA, Mmanoko Jerry, BA (Wits), MPhil (Stell), in Sociology, in the Department of Sociology. Degree by thesis. Thesis: *Protecting and organising the Apartheid and post-Apartheid precarious municipal workforce: The Cape Town Municipal Workers Association and the South African Municipal Workers Union in Cape Town.*

Supervisor: Professor LJW van der Walt.

Co-supervisor: Professor N Ulrich (UFH).

MASUKU, Seabird, MEd (Zimbabwe), in African Language Studies, in the School of Languages and Literatures. Degree by thesis. Thesis: *Issues in Language Acquisition Planning in Zimbabwe: The Case of Ndebele within the Primary Education System.*

Supervisor: Professor D Nkomo.

MOYO, Phoebe Michelle Zibusiso Sandi, MSocSci (UFH), in Sociology, in the Department of Sociology. Degree by thesis. Thesis: *The Zimbabwe National Gender Policy (NGP) and Women's Economic Empowerment (WEE): A study of small-scale gold miners in Bubi and Gwanda Districts, Matabeleland, Zimbabwe.*

Supervisor: Dr L Alfers.

MSOMI, Nqobile Nomonde, MA (Rhodes), in Psychology, in the Department of Psychology. Degree by thesis. Thesis: *A case study of GADRA's community-engaged praxis for educational transformation.*

Supervisor: Professor J Akhurst.

MURRAY, Robert Ian, BA (Natal), MA (Rhodes), in Drama, in the Department of Drama. Degree by thesis. Thesis: *A conspiracy*

of silence: The authorial potential of full masks in performer training, dramaturgy and audience perception in South African visual theatre.

Supervisor: Professor A Krueger.

NALUKENGE, Claire, MA (Makerere), in Art History, in the Department of Fine Art. Degree by thesis. Thesis: *The spiritual space of Mubende hill in Uganda: Rethinking "awaka w'ensi aw'omweyimirize, Maama Nakayima" as a symbol of ritual and spiritual performance.*

Supervisor: Professor R Simbao.

Co-supervisor: Dr R Baasch.

NDABULA, Yanela, BA (Wits), MA (Rhodes), in Psychology, in the Department of Psychology. Degree by thesis. Thesis: *"I pulled it out": A discursive exploration of narrated accounts on decision-making and power differentials in the prescription and use of long-acting reversible contraceptives.*

Supervisor: Distinguished Professor CI Macleod.

NEMARAMBA, Dylan, MA (Midlands State), in English Language and Linguistics, in the Department of Linguistics and Applied Language Studies. Degree by thesis. Thesis: *Social justice implications of the language of the court judgment genre and its development in pre- and post-independence Zimbabwe.*

Supervisor: Professor R Adendorff.

Co-supervisor: Dr I Siebörger.

POKOO, John Mark, BA (Ghana), MA (Sussex), in Political and International Studies, in the Department of Political and International Studies. Degree by thesis. Thesis: *(In)security communities in Africa: Small arms and light weapons norm compliance by the economic community of West African States.*

Supervisor: Professor S Magadla.

SCHAFLI, Sasha-Lee, MA (Rhodes), in Linguistics and Applied Language Studies, in the Department of Linguistics and Applied Language Studies. Degree by thesis. Thesis: *The use of video as a resource for the development of L1 Foundation Phase Literacy in isiXhosa: A digital multimodal discourse approach.*

Supervisor: Dr I Siebörger.

Co-supervisor: Professor MA de Vos.

SELEPE, Babitsanang Annah, BMilHons (Stell), MA (Wits), in Psychology, in the Department of Psychology. Degree by thesis. Thesis: *The mediating role of generational difference on the relationship between psychological capital, psychological empowerment, organisational support and the wellbeing of South African National Defence Force members.*

Supervisor: Dr T Kabungaidze.

Co-supervisor: Dr CD Diale-Makgetla.

WABABA, Zola Richman, MEd (Stell), in African Language Studies, in the School of Languages and Literatures. Degree by thesis. Thesis: *Dictionaries as pedagogic tools: A case study of selected schools in Makhanda, Eastern Cape.*

Supervisor: Professor D Nkomo.

ZHANG, Lifang, MA (Rhodes), in Art History, in the Department of Fine Art. Degree by thesis. Thesis: *Restless imagination: Material, urban space and contemporary art practices in postcolonial Harare*.

Supervisor: Professor R Simbao.

Faculty of Law (1 PhD)

Degree of Doctor of Philosophy

MAZIYA, Nokwanda Takalanga, BA, LLB (Rhodes), LLM (Stell), in the Faculty of Law. Degree by thesis. Thesis: *Protecting stateless children in South Africa through nationality: A children's rights approach*.

Supervisor: Professor EC Lubaale.

Co-supervisor: Professor LO Juma.

Faculty of Pharmacy (2)

Degree of Doctor of Philosophy

ALLAN, Lucie, MPharm (Rhodes), in Pharmacy Practice, in the Faculty of Pharmacy. Degree by thesis. Thesis: *A social realist analysis of health policy development: Interests, ideas and community pharmacists*.

Supervisor: Dr C Oltmann.

SVOGIE, Archibald Lesley, MSc (Pharmacy) (Rhodes), in Pharmaceutics, in the Faculty of Pharmacy. Degree by thesis. Thesis: *Drug registration and regulation-PESTEL analysis: Learnings from prostheses manufacturing*.

Supervisor: Professor SMM Khamanga.

Faculty of Science (51 PhDs)

Degree of Doctor of Philosophy

ANDATI, Lexy Acherwa Livoyi, BSc (Nairobi), MSc (Rhodes), in Physics, in the Department of Physics and Electronics. Degree by thesis. Thesis: *MeerKAT Polarimetric Observations of Pictor A*.

Supervisor: Distinguished Professor OM Smirnov.

Co-supervisor: Dr L Baidoo (Toronto).

ANG'ANG'O, Lilian Mbaisi, MSc (Nairobi), in Bioinformatics, in the Department of Biochemistry, Microbiology and Bioinformatics. Degree by thesis. Thesis: *Analyzing Microsporidia sp. MB from sequence to biology: A comprehensive exploration of the genome, protein structures, and functions through extensive Bioinformatics analysis*.

Supervisor: Professor O Tastan Bishop.

Co-supervisor: Dr JK Herren (ICIPE).

BASO, Nompumelelo Catherine, MSc (Rhodes), in Botany, in the Department of Botany. Degree by thesis. Thesis: *The Enemy Release. Hypothesis and beyond: Lagarosiphon major*

invasion dynamics and management options for New Zealand using native natural enemies from South Africa.

Supervisor: Professor JA Coetzee.

BOLOSHA, Uviwe, BSc (WSU), MSc (Rhodes), in Environmental Science, in the Department of Environmental Science. Degree by thesis. Thesis: *Assessing the impacts of Lantana camara and opportunities for ecological restoration after its removal: Does clearing facilitate both soil and native vegetation recovery?*

Supervisor: Professor S Ruwanza.

Co-supervisors: Professor G Thondhlana and Distinguished Professor CM Shackleton.

CELE, Tholakele Gladness, MScAgric (Natal), in Microbiology, in the Department of Biochemistry, Microbiology and Bioinformatics. Degree by thesis. Thesis: *Combined biological and chemical control of Fusarium associated with Eldana Saccharina walker in South African sugarcane production*.

Supervisor: Professor JF Dames.

Co-supervisor: Dr S Rutherford (SASRI).

CENTANE, Sixolile Sibongiseni, BSc (UCT), MSc (Rhodes), in Chemistry, in the Department of Chemistry. Degree by thesis. Thesis: *Selective and sensitive electrochemical detection of the Human Epidermal Growth Receptor 2 breast cancer biomarker, using Co(II) phthalocyanine-nanoparticle based platforms*.

Supervisor: Distinguished Professor T Nyokong.

CHARLES, Ntsikelelo, MSc (Rhodes), in Physics, in the Department of Physics and Electronics. Degree by thesis. Thesis: *Systematic effects and mitigation strategies in observations of cosmic re-ionisation with the Hydrogen Epoch of Reionization Array*.

Supervisor: Distinguished Professor OM Smirnov.

Co-supervisors: Professor G Bernardi (SKA) and Dr L Bester (SARAO).

CHIBWE, Mary, MSc (Zambia), in Water Resource Science, in the Institute for Water Research. Degree by thesis. Thesis: *Context-related drivers, occurrence and human exposure to antibiotic resistant Campylobacter in selected river systems in the Eastern Cape, South Africa*.

Supervisor: Dr CF Nnadozie.

Co-supervisor: Professor ON Odume.

CHIFETETE, Varaidzo Winnie, BScHons (Chinhoyi), MSc (Leeds), in Microbiology, in the Department of Biochemistry, Microbiology and Bioinformatics. Degree by thesis. Thesis: *Interaction of Arbuscular Mycorrhiza with Solanum Tuberosum*.

Supervisor: Professor JF Dames.

DE BEER, Ernst Friedrich Ludwig, MSc (NWU), in Entomology, in the Department of Zoology and Entomology. Degree by thesis. Thesis: *Augmentation of Aphytis melinus DeBach Hymenoptera: Aphelinidae for the control of California red scale Aonidiella aurantii Maskell (Hemiptera: Diaspididae) on citrus*.

Supervisor: Distinguished Professor MP Hill.

Co-supervisor: Professor S Moore.

DIEVART, Alexia Madeleine Angele, MSc (Université de La Réunion), in Zoology, in the Department of Zoology and Entomology. Degree by thesis. Thesis: *Ecological impacts of photoautotrophic Euendoliths on South African mussel beds*.

Supervisor: Professor PW Froneman.

DUNA, Oliver Olwethu, MSc (Rhodes), in Marine Biology, in the Department of Zoology and Entomology. Degree by thesis. Thesis: *The influence of the physical environment on invertebrate larval transport, settlement and recruitment with insights on early-stage physiological performance*.

Supervisor: Professor F Porri.

Co-supervisor: Distinguished Professor CD McQuaid.

ELAGO, Fiindje Elias Muliokela, MSc (CBU), in Physics, in the Department of Physics and Electronics. Degree by thesis. Thesis: *Thermoluminescence and phototransferred thermoluminescence of annealed α -Al₂O₃:C*.

Supervisor: Professor ML Chithambo.

FALADE, Abiodun Emmanuel, MTech (FUT), in Fisheries Science, in the Department of Ichthyology and Fisheries Science. Degree by thesis. Thesis: *Optimising Integrated Multitrophic Aquaculture (IMTA) on a South African abalone farm*.

Supervisor: Professor PJ Britz.

Co-supervisor: Professor CLW Jones.

FERREIRA, Ina Susan, MSc ENMT (UFS), in Entomology, in the Department of Zoology and Entomology. Degree by thesis. Thesis: *A systematic revision of Aprionyx Barnard, an endemic South African genus of Leptophlebiidae (Ephemeroptera)*.

Supervisor: Professor MH Villet.

Co-supervisor: Dr HM Barber-James (NMNI).

FRANCIS, Buhle, BSc (NUST), MPhil (Stell), in Environmental Science, in the Department of Environmental Science. Degree by thesis. Thesis: *Implications of Lantana camara invasion on rural livelihoods and native woody species in the Kavango Zambezi Transfrontier Conservation area, Zimbabwe*.

Supervisor: Distinguished Professor CM Shackleton.

Co-supervisor: Professor J Gambiza.

GRIFFITH, Tamzin Camilla, MSc (Rhodes), in Entomology, in the Department of Zoology and Entomology. Degree by thesis. Thesis: *Biological control of torch cactus in South Africa: Finding a suitable agent for a weed with an unknown indigenous distribution*.

Supervisor: Professor ID Paterson.

HUGO, Benjamin Vorster, MSc (UCT), in Physics, in the Department of Physics and Electronics. Degree by thesis. Thesis: *MeerKAT: A journey from commissioning to science*.

Supervisor: Distinguished Professor OM Smirnov.

Co-supervisor: Professor G Bernardi (SKA).

HULUSHE, Siyabonga Theophillus, MSc (Rhodes), in Chemistry, in the Department of Chemistry. Degree by thesis. Thesis: *Metal-organic framework-based Heterogeneous catalysts with tailored active sites for precise oxidative transformations*.

Supervisor: Professor GM Watkins.

Co-supervisor: Professor SD Khanye.

IMBWAE, Imikendu, BA (Zambia), PG Cert (KFTI), MSc (CBU), in Fisheries Science, in the Department of Ichthyology and Fisheries Science. Degree by thesis. Thesis: *Assessing the vulnerability of inland fisheries to human-induced perturbation on Lake Kariba fishery, Zambia*.

Supervisor: Professor S Aswani.

Co-supervisor: Professor WHH Sauer.

JOHN, Ruth Omoti, BTech (FUT), MSc (Obafemi Awolowo), in Biochemistry, in the Department of Biochemistry, Microbiology & Bioinformatics. Degree by thesis. Thesis: *Screening for inhibitors of the Mycobacterium tuberculosis DnaK-DnaJ-GrpE complex*.

Supervisor: Professor AL Edkins.

Co-supervisor: Dr GL Abrahams.

LUHANA, Charles Benjamin, BEd (Malawi), MSc (NENU) in Chemistry, in the Department of Chemistry. Degree by thesis. Thesis: *Graphene and its composite electrodes for selective detection of catecholamine neurotransmitters*.

Supervisor: Professor PN Mashazi.

MAGADLA, Aviwe, MSc (Rhodes), in Chemistry, in the Department of Chemistry. Degree by thesis. Thesis: *Phthalocyanine-based bio- functional conjugates: Photodynamic therapy and photoantimicrobial chemotherapeutic efficacy evaluation in-vitro*.

Supervisor: Distinguished Professor T Nyokong.

MAFOKWANA, Kamogelo, BScHons (Rhodes), in Chemistry, in the Department of Chemistry. Degree by thesis. Thesis: *Experimental and theoretical studies in the elucidation of chemical and biochemical reaction mechanisms*.

Supervisor: Professor PT Kaye.

Co-supervisor: Professor KA Lobb.

MAINA, Eric Kamau, BSc (Nairobi), MSc (Rhodes), in Physics, in the Department of Physics and Electronics. Degree by thesis. Thesis: *H I analysis of resolved galaxies in the MeerKAT Absorption Line Survey*.

Supervisor: Dr G Jozsa.

MAHLASELA, Zuko, MSc (Rhodes), in Applied Mathematics, in the Department of Mathematics. Degree by thesis. Thesis: *Keychains and preferential fuzzy sets with applications*.

Supervisor: Professor Emeritus V Murali.

MASUDI, Wiya Leon, BSc (Bukavu), BAHons (UJ), MSc (Rhodes), in Environmental Biotechnology, in the Institute for Environmental Biotechnology. Degree by thesis. Thesis: *Towards*

a bacterial biofertiliser for the rehabilitation of disturbed and degraded land.

Supervisor: Professor AK Cowan.

MBENGO, Idah, MA (Zimbabwe), in Environmental Science, in the Department of Environmental Science. Degree by thesis. Thesis: *A social realist account of the way smallholder farmers exercised their agency in the adoption of climate-smart agriculture practices in degraded landscapes in Machubeni, Eastern Cape, South Africa.*

Supervisor: Professor J Gambiza.

Co-supervisor: Professor CM Boughey.

MCGREGOR, Gillian Kathleen, BAHons, MSc (Rhodes), in Geography, in the Department of Geography. Degree by thesis. Thesis: *Aspects of the sustainability of the wild honeybush industry.*

Supervisor: Professor W Ellery.

MOTHUPI, Frans Makwena, MSocSci (Rhodes), in Environmental Science, in the Department of Environmental Science. Degree by thesis. Thesis: *Wild edible plants in rural home gardens: Livelihoods, perceptions, economic value and traditional knowledge.*

Supervisor: Distinguished Professor CM Shackleton.

MUNGENCE, Chipo Perseverance, MSc (Zimbabwe), in Zoology, in the Department of Zoology and Entomology. Degree by thesis. Thesis: *Plankton and macroinvertebrate dynamics in the Khakhea-Bray transboundary aquifer region.*

Supervisor: Professor RJ Wasserman.

Co-supervisor: Dr T Dalu (UMP).

MOLUPE, Nthabeleng Regina, MSc (Rhodes), in Chemistry, in the Department of Chemistry. Degree by thesis. Thesis: *Photodynamic anticancer and antimicrobial activities of aza-BODIPY and porphyrin-based photosensitisers and their non-linear properties.*

Supervisor: Professor J Mack.

Co-supervisor: Distinguished Professor T Nyokong.

MONAMA, Mokgerwa Zacharia, BScHons (Limpopo), MSc (Rhodes), in Bioinformatics, in the Department of Biochemistry, Microbiology and Bioinformatics. Degree by thesis. Thesis: *Structural dynamic investigation of the mutation-induced resistance mechanisms of Mycobacterium tuberculosis DNA-directed RNA polymerase against Rifampicin.*

Supervisor: Professor O Tastan Bishop.

MUSHORE, Tapiwa Gift, BScHons (Zimbabwe), MSc (Rhodes), in Entomology, in the Department of Zoology and Entomology. Degree by thesis. Thesis: *Biology and management of the fruit piercing moth Serrodes partita in citrus orchards.*

Supervisor: Distinguished Professor MP Hill.

Co-supervisors: Dr C Coombes (CRI) and Professor S Moore (CRI).

MWANGUDZA, Petronilla Masika, BSc (Eldoret), MSc (Pwani), in Fisheries Science, in the Department of Ichthyology and Fisheries Science. Degree by thesis. Thesis: *Assessment and mitigation of biosecurity risks associated with macroalgae inclusion in farmed Abalone diets in South Africa.*

Supervisor: Professor CLW Jones.

Co-supervisor: Dr B Macey (DFFE).

MZINGIRWA, Fatuma Ali, BSc (MOI), MSc (Eldoret), in Fisheries Science, in the Department of Ichthyology and Fisheries Science. Degree by thesis. Thesis: *Fishery characteristics, genetic structure, population demography and value chain of Skipjack and Kawakawa exploited in coastal waters of the Western Indian Ocean.*

Supervisor: Professor WHH Sauer.

Co-supervisors: Dr G Okemwa (KMFRI) and Professor P Shaw (Aberystwyth).

NAWA, Nawa, BScEd (Zambia), MSc (Leeds), in Zoology, in the Department of Zoology and Entomology. Degree by thesis. Thesis: *Assessing the status of the Barotse floodplain fishery and the implications of the Australian redclaw crayfish Cherax quadricarinatus invasion on the fishery.*

Supervisor: Professor RJ Wasserman.

Co-supervisors: Dr B Ellender (SAIAB) and Dr J Pegg (SAIAB).

NTOKOANE, Tholoana, MSc (UJ), in Ichthyology, in the Department of Ichthyology and Fisheries Science. Degree by thesis. Thesis: *A revised checklist of extant freshwater fishes of the Zambezian Lowveld Ecoregion, with taxonomic revision of the lowveld largescale yellowfish, Labeobarbus marequensis.*

Supervisor: Professor A Chakona (NRF-SAIAB).

Co-supervisors: Dr EJW Vreven (RMCA) and Professor WT Kadye.

OCKHUIS, Samantha Angelique Natasha, M.Tech (CPUT), in Fisheries Science, in the Department of Ichthyology and Fisheries Science. Degree by thesis. Thesis: *Genetic connectivity of the slinger Chrysoblephus puniceus among Marine Protected Areas and unprotected areas along the east coast of South Africa.*

Supervisor: Dr T Murray (SAIAB).

Co-supervisors: Dr S Fennessy (ORI) and Professor P Cowley (SAIAB).

OSOH, Miracle Ogagaoghene, BSc (Port Harcourt), MSc (Ibadan), in Water Resource Science, in the Institute for Water Research. Degree by thesis. Thesis: *Taxonomy- and trait-based responses of chironomid assemblage structure to pollution in selected urban rivers, Eastern Cape, South Africa.*

Supervisor: Professor ON Odume.

Co-supervisor: Dr CF Nnadozie.

OWOWENU, Enahoro Kennedy, BSc (MOUAW), MSc (Lagos), in Water Resource Science, in the Institute for Water Research. Degree by thesis. Thesis: *A mechanistic and trait-based approach to investigating macroinvertebrates distribution and exposure*

to microplastics in riverine systems.

Supervisor: Professor ON Odume. Co-supervisors:

Dr CF Nnadozie and Dr X Siwe-Noundou (SMU).

REDELINGHUYS, Suzanne, MSc (Rhodes), in Marine Biology, in the Department of Zoology and Entomology. Degree by thesis. Thesis: A multidisciplinary study to assess the ecology of the Cape sea urchin, *Parechinus angulosus*, and its emerging use as a bioindicator to monitor coastal resiliency.

Supervisor: Professor F Porri (SAIAB).

Co-supervisor: Dr GF Matcher.

TONUI, Ronald, BSc (MMUST), MSc (PAU), in Biochemistry, in the Department of Biochemistry and Microbiology. Degree by thesis. Thesis: *Identification of Mycobacterium tuberculosis DnaK substrates - towards inhibiting DnaK as a novel drug target for the treatment of tuberculosis.*

Supervisor: Professor AL Edkins.

TUMWESIGYE, Edgar, BScEd, MSc (Makerere), in Water Resource Science, in the Institute for Water Research. Degree by thesis. Thesis: *Microplastics as potential vectors for selected organic chemical pollutants in river ecosystems.*

Supervisor: Professor ON Odume.

Co-supervisors: Professor GW Nyakairu (Makerere) and Dr CF Nnadozie.

SCHEEPERS, Martinus Johannes, MSc (Rhodes), in Ichthyology, in the Department of Ichthyology and Fisheries Science. Degree by thesis. Thesis: *Review of the systematics and regional diversity of the diploid barbs (Enteromius Cope, 1867) of southern Africa.*

Supervisor: Professor A Chakona (NRF-SAIAB).

Co-supervisor: Dr P Braganca (SAIAB).

SCHLEGEL, Philippa Kirsten, BA (Monash), MSc (Rhodes), in Geography, in the Department of Geography. Degree by thesis. Thesis: *Sediment and associated phosphorus dynamics in meandering floodplain wetlands in the Tsitsa river catchment: Implications for floodplain systems in South Africa.*

Supervisor: Dr B van der Waal.

Co-supervisor: Dr J Tanner.

SINDELO, Azole, MSc (Rhodes), in Chemistry, in the Department of Chemistry. Degree by thesis. Thesis: *Metallophthalocyanines: Versatile probes for microbial photoinactivation and for pollutant degradation as photocatalysts, both molecular or supported form.*

Supervisor: Distinguished Professor T Nyokong.

VININDWA, Bonani, MSc (WSU), in Chemistry, in the Department of Chemistry. Degree by thesis. Thesis: *The development of dual-action antimalarial compounds.*

Supervisor: Professor R Klein.

XHANTI, Sinoxolo, BSc (Zululand), MSc (Rhodes), in Mathematics, in the Department of Mathematics. Degree by thesis. Thesis: *The number of independent subsets and the energy of caterpillars under degree restrictions.*

Supervisor: Professor EOD Andriantiana.

WALKER, Gareth Alexander, MSc (Stell), in Zoology, in the Department of Zoology and Entomology. Degree by thesis. Thesis: *The impacts of bottom-up and top-down drivers in shaping the herbivore community in Pafuri, Kruger National Park, South Africa.*

Supervisor: Professor DM Parker (UMP).

Co-supervisor: Dr L Minnie (UMP).

WOLMARANS, Abigail, MSc (NWU), in Entomology, in the Department of Zoology and Entomology. Degree by thesis. Thesis: *Developing biological control agents for the management of the invasive tree Robinia pseudoacacia.*

Supervisor: Dr GD Martin.

Co-supervisor: Dr P Weyl (CABI).

Vice-Chancellor's Distinguished Senior Research Award



SARChI Chair in Ecology and Management
of Aquatic Invasive Species

Professor Julie Coetzee
Principal Scientist, South African Institute
for Aquatic Biodiversity

The Silver Bullet

Professor Julie Coetzee holds the SARChI Chair in Ecology and Management of Aquatic Invasive Species. She is also the Principal Scientist at the South African Institute for Aquatic Biodiversity. But to the public, Professor Coetzee is the face of South Africa's successful battle against water hyacinth.

How did the spectacularly lovely water hyacinth leave its home in the Amazon basin to conquer the world and become one of the planet's most vexatious aquatic weeds?

Its global spread started in 1884, during a big cotton expo at St Louis in the United States. Two (2) entrepreneurial Japanese attendees handed out water hyacinth plants (*Pontederia crassipes*) at the conference as gifts. Water hyacinths have beautiful violet-coloured flowers, so people took them home and put them in their ponds as ornamental plants.



Julie Coetzee, recently awarded the prestigious Department of Science and Innovation/NRF SARCHI Tier 1 Chair in Biological Control and Freshwater Alien Invasive Species Management, shared with Rhodes University, first encountered this formidable aquatic weed in 1998.

Photo: Chris Marais.

It just so happens that water hyacinth is one of the fastest-growing plants in the world. Free of the natural enemies that might constrain its growth, a small colony can double in size every week or two. Within months it can cover a large dam or watercourse, with disastrous results for water levels, fish and other plants.

The water hyacinth is among the most wasteful plants when it comes to water, sending nearly 40% of the water in which it floats up into the atmosphere. It completely mats the surface of the water, and makes ideal micro-habitats for breeding mosquitoes and other potentially disease-carrying vectors like bilharzia snails.

A Formidable Weed

It was brought into South Africa as an ornamental plant for garden ponds in the early 1900s. Shortly after that, it spread to the Cape Flats and by the 1960s, it had reached the waterbody that has become synonymous with its presence in this country: Hartbeespoort Dam, west of Pretoria.

The dam has become notorious (Wikipedia uses the word 'renowned') for its poor water quality. Industrial and domestic effluent flow into it from Johannesburg's badly managed wastewater treatment plants. And of course, the water hyacinth absolutely thrives on the high levels of nutrients in the water - as does cyanobacteria and other undesirable microorganisms.

In the 1970s, alarmed by its rapid growth matting the surface of Hartbeespoort Dam, authorities deployed herbicides, to little effect. In 1974, biological control was used, the first of nine species of weevils, grasshoppers and bugs that would eventually be deployed - more than in any other country in the world. Each intervention knocked it back a little, but as the decades

passed and more and more sewage flowed into the dam from Johannesburg, the plant growth became more vigorous. Also, the weather worked against the insects. In winter, the frosty temperatures caused them to die back.

In summer, the hyacinths had a head start before the insect numbers were able to build up.

Handcrafts or Nature

Julie Coetzee, recently awarded the prestigious Department of Science and Innovation/NRF SARCHI Tier 1 Chair in Biological Control and Freshwater Alien Invasive Species Management, shared with Rhodes University, first encountered this formidable aquatic weed in 1998.

Apart from a love for the outdoors, there were no real indications during her childhood in Edenvale that she would end up studying the natural sciences.

"In fact, I took an aptitude test, and the result said I should get into handcrafts."

From the first year of her undergraduate degree at the University of the Witwatersrand, studying Zoology and Botany, Julie knew she had made the right decision.

"I went on every field trip I could go on, to Nylsvley Nature Reserve, Wits Rural Facility near Acornhoek, the Magaliesburg, all around Nelspruit and then a coastal field trip, which I absolutely loved.

"Then in my second year, all the Zoology lecturers gave a talk on their passions. That's when I heard Professor Marcus Byrne talking about the biological control of prickly pears. And I thought, this is amazing!"

The Best Science Ever

With his help, Julie attended the Entomological Society Congress in Stellenbosch in 1997.

“There was some stuff about Forensic Entomology, which was pretty gross, but really fascinating. And then there was a lot about biological control using insects. And I remember thinking: This is the best science I’ve ever come across.”

Seeing scientists working in shorts and flip-flops at the Plant Protection Research Institute, PPRI (now Plant Health and Protection, part of the Agricultural Research Council, a parastatal of the Department of Agriculture) only served to confirm she was making the right choice.

Her first Postgraduate study project in the field of biological control was on a likely control agent of the water hyacinth, a bug that proved fairly effective, but nothing like *Megamelus scutellaris*, the little hopper that is currently laying waste to this aquatic plant scourge. After her PhD, Julie worked at Wits University, doing research and lecturing before finding a job at Plant Protection with the PPRI.

Hydrilla and a Cosmopolitan Moth

When working at PPRI, Julie worked almost exclusively on water weeds. One, a submerged plant from the United States called Hydrilla, had been spotted in Jozini Dam in Pongola, northern KwaZulu-Natal. It was very fast-growing, highly invasive and it seemed inevitable it rapidly would spread to all South Africa’s water bodies.

“I started working on a biocontrol agent, but then Hydrilla sort of fizzled out. It never spread further than the Pongola River. There is a South African moth that developed a taste for Hydrilla, what we would call a ‘cosmopolitan’ or non-specialist moth, and so Hydrilla is kept in check.”

In 2007, Julie received a job offer from Rhodes University, working on water weeds, first as a Senior Lecturer, then an Associate Professor before joining the Botany Department.

But when the Department of Forestry, Fisheries and the Environment (DFFE) commissioned Rhodes to help on a major project, she seconded herself over to the Centre for Biological Control (CBC) in a full time research post, allowing the Botany Department to fill her post.

Back at Harties

The water hyacinth cover, meanwhile, was growing and contracting while it went through a confusing decade of management missteps and herbicide spraying. Meanwhile, the dam’s pollution just became worse and worse.

“The biocontrol agents released in the 1990s by the PPRI scientists were established and survived to some extent, but the spraying programme would always keep their numbers down. The authorities sprayed glyphosates for years and years. So the hyacinth would be knocked back, and the little insects that had been released to eat them would also be knocked

back. And then the plants would rapidly come back, while the insect populations built up slowly.

“Then in 2008, a remediation programme was implemented. As usual, it did not deal with what was coming into the system, only with what was already there. Huge amounts of money were spent, hundreds of millions of rands.

“It was during this bioremediation programme that all these huge blue-green algae blooms happened. With water hyacinth under chemical control, there was light reaching into the water’s depths. And because there were plenty of nutrients in the water, the cyanobacteria just went out of control.”

A Very Bad Idea

Then the funding ran out, and no more budget was allocated after 2016.

“So by the middle of 2017, 50% of the dam was covered in water hyacinth again.”

The next year, the Department of Fisheries, Forestry and Environment invited Rhodes University to become involved in the biological control of the water hyacinth at Hartbeespoort Dam.

It seemed like a very bad idea, said Julie Coetzee.

“We thought we’d just be setting ourselves up for disaster. The dam is so polluted, the really cold winters kill the plants and also the bugs. So why would we even get involved?”

Even so, Julie and a team went up to have a look at what was happening at the dam.

“In the absence of spraying, the biocontrol agents had built up, but because of the amount of nutrients in the water, the plants just kept increasing. The old pattern.”

One Ray of Hope

But there was one promising little ray of hope. It was *Megamelus scutellaris*, also known as the water hyacinth planthopper. This was the ninth biological agent that was deployed on the water hyacinth, and would prove to be the most effective. So far it is the ‘Silver Bullet’, as Julie Coetzee says.

It is yellowish to pale brown, half the size of a ladybird, and eats only the water hyacinth. It is found wherever its host plant is found, and seems to tolerate colder conditions better than the other, more tropically-adapted insects.

Both the adult and the nymph parts of its life-cycle feed on the plant, eventually damaging it so badly that it sinks underwater. *Megamelus*, in short, is a highly effective water hyacinth predator.

Previous strategies had simply been to release and allow the insects to spread on their own.

Part of the Solution

"This time we decided to adopt an inundative approach, where we had mass rearing, frequent releases and huge numbers. We upscaled our rearing here at Waainek breeding station near Rhodes University, and then over the years, increased what we call our community partner rearing stations. Those are the guys living around the dam, who have felt helpless for so many years, and who are now part of the solution. They are breeding the insects for us. In this way, we can inundate the plants with hundreds of thousands of insects reasonably quickly.

"So in the first year we tried it, the plant cover went down to only 5% by the end of summer -an insect-induced decline, not a winter-induced one. For the whole season, the dam was beautiful and clear."

Then the Covid-19 pandemic shut down the whole world, including the Centre for Biological Control's work at Hartbeespoort Dam.

An Ominous Green Plume

"But we had this incredible app that one of our students developed, which allowed us to look at satellite images and monitor the change in cover twice a week. Then suddenly, we started noticing these big green plumes, and thought, oh dear, that's not good.



Photo: Chris Marais.

"What had happened is that with warming waters, more light, no cover from the hyacinth, the water hyacinth seeds in the water started to germinate. They exploded to the point that by the end of December, we were at nearly 50% cover again. We realized that we still weren't releasing enough insects into the system at the beginning of the growing season.

"So we've been working to close that gap between the time when plants germinate from seed and when we can get enough insects on. And that's where the community partners have proven so effective.

"This year, for the first time, we've actually got it right. Usually we release insects in October or November, once we've managed to get their numbers up. But now we have got the rearing stations at the dam through winter, keeping the bugs alive by using low-tech solutions, like simple fish tank heaters to keep the temperatures in the tanks and tunnels high enough for them to survive a Highveld or Makhanda winter."

"We are giving people their own solutions. We've got a WhatsApp group and they chat to each other, and we can chat to them, and say, guys, now's the time to get your insects out. We have ten stations around the dam. At the height of last summer, we were down to under 13%."

Desperation Gives You Wings

The CBC people are often asked what *Megamelus* will eat when all the plants are gone. The answer is that they can eat nothing else, and will die. But before that, something interesting happens.

"*Megamelus* has wing dimorphism. Usually they are flightless, but if things become overcrowded or the plant quality becomes bad, a gene switches and we then see them developing wings so they can fly off and find more water hyacinth. It's a trade-off though, because without wings, all their energy goes into reproduction. When they do have wings, their ovaries and testes shrink and they become less fertile.

"This swarming behaviour has happened twice at Hartbeespoort Dam so far. The first time, in 2021, people were telling us they were going to sue us, that these bugs were biting them - which is impossible - and doctors were blaming any bite or rash on *Megamelus*.

"The most recent time, people were far better informed. They were annoyed when *Megamelus* dropped into their drinks or onto their pizzas, and when their swarms made sitting outside under lights impossible, but the community know what's going on, and they know it's temporary. There's a Facebook page that keeps everyone informed."

Water Lettuce vs The Far Scarier Beast

During late 2023, while the water hyacinth was being munched into near-oblivion by *Megamelus*, another problematic aquatic plant popped up, this time on the Vaal River. Just like water hyacinth, water lettuce (*Pistia stratiotes*) is a pretty plant brought in for garden ponds. Like water hyacinth, it grows swiftly. And just as with Hartbeespoort Dam, the Vaal River is dangerously eutrophic.

"There are nearly forty (40) Wastewater Treatment Works in the catchment of all the little rivers that lead into the Vaal, and not one of them is compliant. Same story again. The nutrient load in the water is off the charts."

And as had happened in Hartbeespoort Dam, when the water lettuce matted the entire surface of the water, bank to bank, for kilometres downstream, the immediate urge was to spray with herbicides. The herbicide spraying cost hundreds of thousands of rands and was incorrectly applied. Removing the water lettuce mats mechanically, tonnes of it at a time, had a similar budget.

The Centre for Biological Control was called in, but told there was no budget. And many residents along the river resisted biological control because they thought it would take too long. Yet water lettuce is quite susceptible to its mortal enemy, the water lettuce weevil (*Neohydronomus affinis*). As with *Megamelus*, it damages the plant to such an extent that it becomes waterlogged and sinks.

A rearing station was established at Rand Water's Eikenhof location, and the water lettuce threat averted. But water hyacinth keeps popping up.

"And it is a far scarier beast than water lettuce," says Professor Coetzee. "We were notified when there was a huge plug of water hyacinth in the Olifants River, leading into Loskop dam. Then it appeared in Bronkhorstspuit Dam. But the insects are exploding there, even though the plants are at 30%. Why? Because we've got community rearing partners all around there and Vaalkop Dam in the North West province.

"We've found it is far better to get community members involved and not wait for government action."

Yellow Flag Iris

Water hyacinth is not the only thing on Julie's plate. A lovely plant called Yellow Flag Iris has arrived and is spreading fast.

"It comes from Europe, and was introduced to stabilise trout dams and golf ponds. Now it's in Dullstroom, all the way up to Magoebaskloof. It's throughout the Western Cape and KwaZulu-Natal too. It's beautiful, but it just takes over. We have a bio-control agent in quarantine and will soon be applying for permission to release it.

"We recently released a weevil in Makhanda's botanical garden to tackle a plant called Delta Arrowhead, which comes from the swamps of Louisiana, and it's taking over huge wetland areas. So yes, there are lots of issues lurking on the sidelines."

Snails, Crayfish, Mosquitoes and Fish

Professor Coetzee's new SARChI Chair is based with the NRF's SA Institute for Aquatic Biodiversity (SAIAB), and is shared with Rhodes University and focuses on various species that are aquatic invasive species. These include snails, crayfish, and invasive fish.

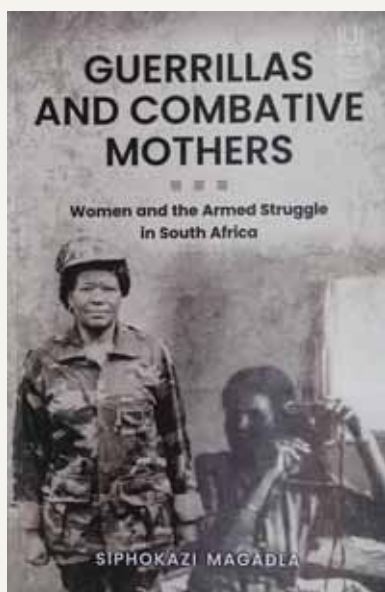
"We're working on how aquatic weeds are facilitating a mosquito invasion, in part spurred by climate change. There is some evidence that the two follow the same trajectory, and already there is worry about the Asian Tiger Mosquito, which has appeared in the Western Cape, which transmits West Nile virus, yellow fever, and dengue fever.

- Julianne duToit

Vice-Chancellor's Book Award



Associate Professor Siphokazi Magadla
Head of Department of Political and International Studies



The Anti-Apartheid Woman Soldiers of South Africa - at Home and Abroad

The Rhodes University Vice-Chancellor's Book Award for 2023 goes to **Associate Professor Siphokazi Magadla** for *Guerrillas and Combative Mothers: Women in the Armed Struggle in South Africa*, a remarkable book that has great reader appeal, way beyond the campus and into the world of critical socio-political literature.

Associate Professor Siphokazi Magadla, Head of the Department of Political and International Studies at Rhodes University, is the author of the freshly-published, ground-breaking *Guerrillas and Combative Mothers: Women in the Armed Struggle in South Africa*.

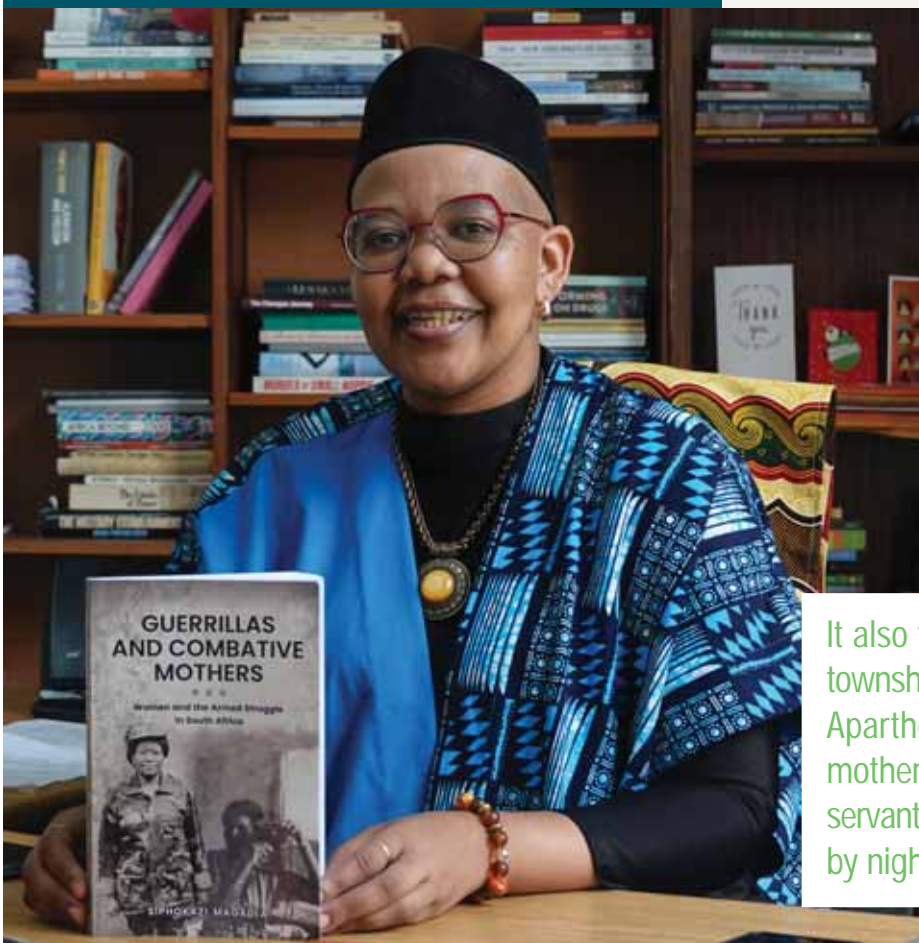


Photo: Chris Marais.

It also takes one into the sprawling townships and 'homeland' system of Apartheid-era South Africa, where mothers were sometimes domestic servants by day and Struggle activists by night.

Her debut book (as a sole author) is based on extensive research and forty-six (46) in-depth interviews, including rare access to testimony not given before. It puts the reader on the scene during the at-times brutal Anti-Apartheid Struggle, and in the southern African training camps of *uMkhonto we Sizwe* (MK), the armed wing of the African National Congress (ANC).

It also takes one into the sprawling townships and 'homeland' system of Apartheid-era South Africa, where mothers were sometimes domestic servants by day and Struggle activists by night.

An important section of *Guerrillas and Combative Mothers* deals with the formation of the South African National Defence Force, which involved the almost-impossible task of merging seven armies - from both sides of the political spectrum - into one 'lean and mean' military machine fit for modern times.

Early Experience

The book was largely based on material Professor Magadla had gathered for her PhD, concerning the lives of a large cross-section of South African woman combatants in post-apartheid South Africa.

Her past experience was immensely valuable for this project.

She had been a research consultant for the Institute of Security Studies (ISS), a job which took her to Rwanda in 2008 to

interview women's organisations set up after the national genocidal period of the mid-1990s.

It was during her time at the ISS that Siphokazi Magadla was exposed to the literature on the demobilisation and civilian re-integration of ex-combatants in South Africa.

Professor Magadla was also a Fulbright Scholar holding a Master's Degree in International Affairs from Ohio University, USA.

However, up to this point her most important assignment was as a member of 2018 high-level Presidential review panel into the operations of the State Security Agency (SSA).

The key finding of the panel was that there had been a "serious politicisation and factionalisation of the intelligence community over the past decade or more, based on factions in the ruling party, resulting in an almost complete disregard for the Constitution, policy, legislation and other prescripts, and turning our civilian intelligence community into a private resource to serve the political and personal interests of particular individuals.

"In addition, we identified a doctrinal shift towards a narrow state security orientation in the intelligence community from 2009 in contradiction to the doctrines outlined in the Constitution, White Paper on Intelligence and other prescripts. We are concerned that the cumulative effect of the above led to the deliberate re-purposing of the SSA."

A Writer's Motivations

The non-fiction genre of books dealing with *uMkhonto we Sizwe* (MK), casts the main protagonists as mostly male.

"In August 2021, Thandi Modise (an MK soldier who became the first chairman of the Joint Standing Committee on Defence in Parliament) argued that the silence about women's roles in the armed struggle was a 'deliberate brushing out of women in the armed struggle, out of the history of liberation in this country'," says Professor Magadla in the introduction to her book.

"Conducting the research almost 20 years into South Africa's democracy (since 2010) has meant that the women I interviewed had settled into a new political and social reality and had an opportunity to reflect on their choices and actions during the armed struggle.

"A new generation of South Africans has become interested in this research, not because they lived under apartheid, but because their own lives have been shaped by the legacies of these struggles."

In an interview for the 2018 Rhodes Research Report, Professor Magadla revealed that her father had been a military man, first with the Transkei Defence Force and then integrated into the SA National Defence Force before being put on 'early retirement' in 1996.

"At the time, I was merely 10 years old. His transition to civilian life had a profound impact on our family life, and I have vivid memories of him whistling in the morning while polishing his shoes, dressed in full military uniform.

"My curiosity was also compounded by the fact that my mother, who is a psychiatric nurse, used to come home with dramatic stories about the recently retired soldiers in her ward, who were suffering with mental illness following their demobilisation.

"So, while the public image of the soldier is that of control, I grew up with an alternative archive of images of former soldiers who were overwhelmed by the realities of everyday life."

She quotes the words of Susan E. Cook, who describes the demobbed soldiers as "walking wounded - depressed and violent men unable to overcome the traumas of combat and the institutions of war."

Professor Magadla continues in her introduction:

"In a sense, the literature helped me to place my own family history within a broader national process of transition and military veteran discourses.

"What I found missing in this narrative were the experiences and stories of the women who had fought in the armed struggle. They did not feature in the images of combatants who had turned into robbers and private security mercenaries."

Putting the Book Together

In a subsequent interview, Professor Magadla described her research process for the book as "following the breadcrumb trail".

"The most difficult thing for me was making the initial connection with the veterans," she said. "I walked into the ANC offices in Gqeberha (formerly Port Elizabeth) and someone there put me on to Nomfundiso Kulati, who was working at the Municipality in Govan Mbeki Avenue at the time.

"I went to her office and found her there, actually dealing with military veterans' affairs as well as her municipal job. That was my research breakthrough in the Eastern Cape.

"Then I went up to Johannesburg and my first interviewee was Makhosazana Xaba (an MK veteran who wrote a poignant memoir-poem titled *Our Wounds, Our Lips*), introduced to me by Catherine Burns (a renowned historian) in 2012. She then connected me to people like Raymond Suttner (scholar and activist), who in turn introduced me to a number of former MK woman veterans.

"In 2018 I received some Mellon Foundation funding for the project, which allowed me six (6) months of research and interviews. That's when I managed to interview Sphiwe Nyanda (MK Commander and later Chief of the SANDF) and Tsepe Motumi (who was the first Director General of the Department of Military Veterans, and at that time advisor to the Minister of Defence), who then connected me to Jackie Sedibe, MK's head of communications and became the highest-ranking woman in the SANDF."

The Exiles

"The narratives of women who became guerrillas make it clear that they did so because of personal and communal experiences of daily violence," writes Professor Magadla in her book. "After 1976, underground work became more dangerous, as those who participated in it were subjected to routine police harassment and detention."

One of the interviewees, Dr Pumza Patricia Dyantyi (who studied medicine in Cuba and later became an MEC of Health in the Eastern Cape), told Professor Magadla she first became involved with MK in Kuruman, Northern Cape:

"Soldiers would enter the country from underground. They would be hidden there. We would look after them there with a family and they would proceed from there. We were doing this work, travelling up and down between Botswana and South Africa. Sometimes we would be carrying letters; sometimes we would courier things that were not disclosed to us. You would learn later that you actually carried a lot of money inside the country. I was arrested around that time."

Dyantyi spent three months in detention at John Vorster Square in Johannesburg, before being banished to the Transkei. She left South Africa in 1978, and eventually ended up in an MK camp in Angola.

A number of women who went into exile had similar stories to tell Professor Magadla. Many of them were ill-treated in custody: strip-searched, mentally and physically abused, and sexually harassed by the SA security establishment.

"It was through the strategies and networks of activists both inside South Africa and those who were in countries across the Southern African region that the women who joined MK and APLA were able to leave the country," Professor Magadla writes.

"Importantly, the networks that were established underground acted as a check-and-balance system to ensure that those who went into exile were not undercover apartheid agents sent by the state.

The Camps

The exiles finally arrived in the various camps across the region and many were dismayed at first.

Phumla Williams, former Director General of the Government Communication and Information System, describes camp life at Quibaxe thus:

"It's the most treacherous terrain. You go to the toilets, it's a mountain. You go to the river to fetch water, it's a mountain. You go to your residence where you live, it's a mountain and when I got there, it got me thinking to say, 'Mm, is that what it is?'

I told myself for as long as the men who are in this camp are surviving, I'm also going to survive."

Another MK camp arrival, Nomfundiso Kulati, said:

"Caculamun in Angola. And it was not nice. The conditions were shocking. Remember I'm from home, now I'm in a military situation but it was nice though, because I found what I wanted. You can remember when we left home people were dying and all what you needed was to be exposed to the might of the military weapons that we needed to use against the racist regime and go and fight."

To Naomi Ribbon Mosholi, the wildlife she encountered in Angola was a problem:

"There are many snakes in Angola, very dangerous, and I was terrified. You'll find somebody - a snake is passing, and I'm frozen and they're like, 'Oh, how can you go and fight the Boers when you are afraid of snakes?' I said, 'Boers are not snakes. It's a man, it's a woman that I am going to be confronting, not a snake.'"

In the camps, the men and women underwent fitness training, firearms training, how to make bombs and use hand grenades. There were also classes for political science and the 'art of warfare'.

"Time and time again," writes Professor Magadla, "women reiterated that MK was not military for its own sake. It was primarily a political army, whose core mandate was the liberation of black South Africans. MK recruits needed to first understand

the political mission of the guerrilla army before taking on the responsibility of carrying a weapon."

Sexual Harassment

Professor Magadla writes that the ANC and MK leadership "were aware of the likelihood of sexual harassment and violence within the camps and beyond."

She uses the example of, among others, activist Mpoetsi Morake's sexually fraught journey from childhood right up to her time spent at Viana Camp in Angola.

The first time Mpoetsi was raped was at the age of 15, by a stranger in her home neighbourhood of Bloemfontein. The second rape occurred just before she went into exile, while at the home of a comrade. The third took place on her first night in exile in Maseru, Lesotho, at the hands of a senior ANC operative. The fourth time was while she was on guard duty at Viana, about which Mpoetsi said:

"There was a point where I stopped fighting. Because he was also big, so he overpowered and raped me."

Mpoetsi kept her silence, and then she realised she had fallen pregnant from the rape.

"As usual, I didn't tell anyone (at first), until I told one of my comrades and this guy was arrested."

The offender was sent to the infamous Quatro punishment camp.

"Many women were raped in MK camps by men senior to them in the ANC and MK," writes Professor Magadla. "Women who had freshly arrived to join the ANC and MK feared being labelled as 'traitors' if they reported their abuse."

"My impression during my interviews with MK women is that women combatants do not deny the reality of sexual violence against women in the MK. What they resist is the portrayal of women ex-combatants as 'sexual slaves', which undermines the various roles and influences of women's presence in MK and ANC institutional culture."

The Home Fires

"When we talk about women's roles in the armed struggle, we tend to concentrate on the MK women, but they were actually the exception," said Professor Magadla in a recent interview.

"The majority of women who participated in the armed struggle were to be found in the townships, working on many levels, giving safe passage to the guerrillas and activists. For instance, we looked at the way Winnie Mandela approached militancy, it was what one could call 'combative motherhood'.

"I asked the men I interviewed about the women they had worked with in the armed struggle and many of them would say:

'It's the mothers who were hiding us. We knew which homes we could run to for safety.' And that's the argument I make around the intersection of militancy and maternal politics. Those mothers in the township didn't qualify for veterans' pensions, they've always had to hustle to put bread on the family table."

In the book, Zoleka Mandela (daughter of Zindzi Mandela) reveals that her mother could strip and assemble an AK47 assault rifle in 38 seconds.

As the security situation in South Africa reached crisis point in the mid-1980s, a statement was released from a Uitenhage women's organisation following the 1985 Langa Massacre:

"We women work in the white homes in Uitenhage. Every day I go there and look after a white baby. I do so with no harmful thoughts in my heart. I care for that baby and bring him up. And when that baby grows up, he comes into the township and shoots my very own children, playing in the street where I have had to leave them to earn money for their food."

This kind of bitter irony, Professor Magadla believes, forced the women of SA's townships to be doubly strong.

"As soldiers or activists against Apartheid, they are expected to be strong. As mothers heading households, they are expected to be strong. They are also expected to survive this kind of schizophrenic social setup. I mean, imagine going to work in the home of a suburban white family, looking after their little white kids and then coming home and moving comrades during the night."

Professor Magadla concludes her chapter on the women who fought apartheid from inside the country with:

"These accounts provide a tangible example of how motherhood can be a transformative tool towards intergenerational collective action among mothers and young people. They illuminate the role of women and mothers as defenders of their communities and aggressors in the political violence that ultimately forced the apartheid regime to negotiate the terms of its own ending."

The Seven Armies Challenge

"Now you take a person who left South Africa as a teenager to go to an MK camp, spent seven years there and is now returning, possibly to join the new SANDF. How do you expect that person to arrive with a Matric certificate?"

That was one of the many challenges that faced the military tacticians in the new Mandela-De Klerk government in 1994, as they grappled with the issue of merging seven armies into

one force - and, possibly, re-defining the form and function of South Africa's new and democratic military force.

"It was in this context that the women I interviewed had to decide whether they were going to be part of this new army, which was meant to serve all South Africans, or if they were going to choose new paths and explore the opportunities and promises of a 'new' nation'," Professor Magadla writes.

She goes on to examine the processes followed to integrate "the various statutory and non-statutory forces to create the SANDF" and examines the role of women who stayed to build the new defence force and give it a new peacetime identity.

Some of the issues were low-ranking designations (former camp commissars suddenly recognised as sergeants) and educational requirements.

As General Nyanda, then the head of the JMCC, told Professor Magadla in an interview:

"There are so many people who are so bright in MK, but they haven't done mathematics, they haven't done things. The fact of having joined MK and fought does not entitle people to be what they want anywhere in any institution in the country."

There were a host of other integration issues that affected all concerned. For many of the women returning from the camps, thus, it was a time for demobilisation and going home to rebuild family units.

"The process of repatriation for those who had left the country was coupled with anxieties about the status of their families and the transition from often unstable transnational life to the task of grounding themselves within their communities again after years, and sometimes decades, of separation, writes Professor Magadla. "They also faced the task of building new professional identities that would determine their economic security in post-apartheid South Africa."

- Chris Marais

Reaction to *Guerillas and Combative Mothers*

The book has been launched eighteen (18) times in institutions in South Africa, Canada, Nigeria, United States and Ethiopia. It has been reviewed in the *African Journal on Conflict Resolution*, the *Politikon: South African Journal of Political Studies*, *Imbiza Journal for African Writing*, *The Conversation*, *The Morning Star* in the United Kingdom and by the Social Science Research Council's Kunjenga Amani.

Some of what the reviewers had to say include:

"This is a book, in the fullness of time, full to the brim, of 40 women speaking to us. We are the beneficiaries of their very great sacrifices, from the time when they decided to be soldiers."

Professor Anthea Garman | Rhodes University
Review in the *African Journal on Conflict Resolution*.

"Guerrillas and Combative Mothers is indispensable for anyone seeking a more insightful understanding of South Africa's liberation narrative. By unravelling the complex realities of the armed struggle and its lasting repercussions, the book serves as an instructive resource for today's generation of activists. With its comprehensive narrative, the book fosters ongoing intergenerational conversations among women, where the focus is not on comparing women's abilities to men's, but rather on how women respond when faced with the challenge of violence. This approach enriches our understanding of women's experiences with violence in South Africa's past and present."

Dr Gavaza Maluleke | UCT Political Studies
Review of the book in *Politikon*, South African Journal of Political Studies.

"Guerrillas and Combative Mothers is a critical project in feminist documentation and memorialisation that helps narrow transgenerational knowledge gaps about histories of women's struggle, and could strengthen cohesion towards combating gender inequality. It is a crucial addition to knowledge on women and war that has resonance for liberation struggles, civil wars, security sector reform, terrorism and violent extremism. I would highly recommend this timely, insightful, and informative book to all scholars of gender/women and security, as well as activists and state actors. It serves as a source of fundamental knowledge to inform gendered reforms that recognize and give full credence to women's involvement in armed conflict in Africa."

Dr Titilope F. Ajayi | Social Science Research Council.

"Guerrillas and Combative Mothers fills a significant gap in the literature on South African history and gender studies. By focusing on women's experiences, it provides a more complete understanding of the South African struggle against apartheid - a crucial corrective to the historical record. The stories shared in this book compel us to reckon with the complexities of history and embrace the diversity of voices and experiences that have shaped South Africa's past and present. Further, Guerrillas and Combative Mothers has underscored the enduring relevance of these narratives in our contemporary world. As we confront ongoing struggles for justice, equality, and human rights, the lessons gleaned from these stories resonate powerfully (see p.186-187). They remind us that the fight for liberation is ongoing, and that it requires not only collective action, but also a deep commitment to amplifying the voices of those whose stories have been marginalized."

Dr Grace Njoki Maina | KCA University, Kenya.

"Guerrillas and Combative Mothers is more than just a project to name the women who dedicated their lives to liberating South Africa. It also presents different ways of theorising. It raises an interesting methodological question about seeing the limits of verbal language and the utility of silence when dealing with traumatic events. How do we analyse silence when the people's wounds have not healed and therefore their lips remain sealed? However, while Magadla's argument is sophisticated, the language doesn't "sweat", to quote Toni Morrison. It remains simple and accessible to all audiences."

Dr Thoko Sipungu
in *The Conversation*.

- Chris Marais

Community Engagement - Engaged Research



The Big Connect

A back-stage glimpse into the world of the Rhodes University Community Engagement Division.

On a day almost twenty years ago, when **Di Hornby** was Director for the Centre of Social Development at Rhodes University, the Vice-Chancellor at the time, Dr Saleem Badat, entered her office with a face like thunder.

“Behind him were three hulking male students who belonged to a drinking club,” she said. Dr Badat had brought them in with a specific mission in mind.

“He told them: ‘If you want a drinking club, you must have a social responsibility project.’ He instructed me to assign the boys.”

Di Hornby had an idea. A Mrs Klaas ran a modest pre-school in an informal settlement adjoining the Joza series of townships in Makhanda. One of the inside walls of the building had collapsed. It seemed the perfect job for three large, handy young men with time on their hands.

Di Hornby with Masonwabe Nduna, manager at Assumption Development Centre in Joza. ADC is a business and upliftment incubator, which is why Di Hornby of RUCE works closely with them.

Photo: Chris Marais.



Through Community Engagement, Rhodes University Support Staff are provided with opportunities to learn computer skills.
Photo: Chris Marais.

"So I loaded them all into my little red sedan and off we went, to Extension Eight," she said. "On the way, they were brave and brash, making typical drinking club conversation. When we arrived, the children were there already, doing their morning circle routine with the teachers in a poorly constructed wattle and daub shack.

"I told the boys: 'Here's the school I'm going to partner you with. Chat to Mrs Klaas and see what she needs. So they did, and on the way back into town there was complete, contemplative silence in my car."

The drinking club in question used to hire the hall at the local bowling club once a month and stage a raucous party.

"I remember they used to concoct a toxic punch," said Di. "You paid your entrance fee and drank this punch all night. The boys then started a system whereby you paid your entrance fee and you donated an item of clothing. Some students would often forget, and offer up their hoodies to get in.

"It was very successful. The club members used to bring Mrs Klaas about 15 bags of collected clothing and anywhere up to R12 000 in cash every month. Mrs Klaas found another surveyed plot nearby, and together with the boys, built a brand-new brick pre-school. It still operates to this day, and the students involved, now Old Rhodians, are very proud of what they helped achieve with Mrs Klaas."

Nearly two decades on, community engagement has evolved into one of the anchor divisions at Rhodes University and is, in certain aspects, a world leader in this field.

The Collective Passion

"South Africa is a young democracy. How do we make it work? How do we help grow the kind of young people needed for that democracy?" And how, through knowledge making, do we contribute to social and economic development?

In many ways, Di Hornby was always destined to be the Director of Rhodes University's Community Engagement (RUCE) Division, a job that she's had since 2011. A lifelong champion of her small Eastern Cape city, with deep roots in the personal and academic life of Makhanda, she and RUCE represent South African civil society in top gear.

And her passion for the job is enduring. In an April 2014 interview in the Rhodes Exchange publication, she said:

"Historically the University has been viewed as an elite establishment for the privileged few, and I would like to think the introduction of community engagement has contributed to making the University more accessible and an integral part of the broader community.

"Initiatives have been introduced to help blur the lines between the University, town and township. Academic departments have introduced service learning projects where Rhodes students work in the township and school pupils are brought onto campus for teaching and learning.

"We aim to challenge the way people think about each other."

The speed and scope of Rhodes University community initiatives grew dramatically after 2015, when the current Vice-Chancellor, Dr Sizwe Mabizela, was inaugurated. On that occasion, he laid out his vision for the University, one that would keep pace with current issues while looking to the future.

The Inaugural Address

"Universities do not exist in a vacuum", he said in a landmark speech, "They exist within a particular social, economic, cultural, political and historical context and are an integral part of the community in which they exist.

"In this regard, Rhodes' third core purpose (in addition to producing and disseminating knowledge and teaching that knowledge) is to discharge its critical societal responsibility through engagement with the pressing questions of the day, whether these are urgent local needs in our own community, or wider issues confronting societies globally.

Initiatives have been introduced to help blur the lines between the University, town and township. Academic departments have introduced service learning projects where Rhodes students work in the township and school pupils are brought onto campus for teaching and learning.

"Our Community Engagement endeavours range from formal credit-bearing service-learning and engaged research courses to student volunteering in local projects. In these activities, we forge respectful, reciprocal, mutually-beneficial and knowledge-driven partnerships with our local (external) community.

"It is through our Community Engagement activities that we endeavour to 'take knowledge beyond the confines of the academy into a variety of social domains'. In this way, our knowledge is tested and enhanced, our scholarship enriched and the socio-economic condition of our local communities improved. In the process, we gain new and deeper insights into the pressing and complex challenges facing our local communities, and a more deeply nuanced view of the wider patterns in which we are located.

"Grahamstown (now Makhanda) is a microcosm of the sharp and stark realities of apartheid legacy where grinding and debilitating poverty and deprivation exist alongside relative affluence.

"Our future and our success as Rhodes University are inextricably bound up with the future and success of the greater Grahamstown community. We are deeply and intimately connected with our local community. It is therefore vitally important that we become actively involved in finding sustainable solutions to the challenges that face us in this space we jointly occupy.



Assumption Development Centre Manager Masonwabe Nduna (centre) with some of the Assumption Development Centre's team at the Second Chance Matric Programme. Photo: Chris Marais.

"We must send a clear and unequivocal message that our University is not just in Grahamstown but is also of and for Grahamstown. We have a particular responsibility to contribute to the creation of a well-functioning, economically sustainable and prosperous Grahamstown.

"We have an extraordinary opportunity to craft fresh and innovative approaches to seemingly persistent societal problems. As I have noted earlier, our success in doing so will attract the interest and respect of observers much more widely. In this way, we can provide signals for how our future can be configured differently from our past.

We must and we will brighten the corner where we are!"

Di Hornby added:

"With that address, Professor Mabizela was really repositioning the university and helping us to understand that we can't go on by living in isolation. We have to build the bridges, and we have to work together to turn it around. One side of town affects the other side of town, and vice versa. So that was the beginning of the journey, and Professor Mabizela made education his priority."

Education Initiatives

"The VC's Education Pathway programme has, over a period of nine years, carefully constructed a multi-stakeholder initiative, with over thirty-four (34) projects working in unison, as a pathway for children, from early childhood, through schooling, to post-schooling opportunities in public education," said Di Hornby.

"The social capital of over eight hundred (800) student volunteers has been at the heart of the intervention and a critical part of the turnaround seen in public education in Makhanda.

"Through the Nine-Tenths Matric Mentoring Programme, the cultivation of mutually beneficial relationships between mentors (university students) and mentees (school learners) has contributed to the holistic development and character-building

of the students and the self-esteem and confidence of the learners, while serving to embed Rhodes University in its local context and to building the Makhanda community."

The Nine Tenths programme is dedicated to "equipping Grade 12 learners in participating public schools with the tools they need to navigate their final year of high school".

Mentors in the programme undergo a rigorous Rhodes University-accredited short course. The recent academic impact of this project has been impressive. More than 50% of the 200-odd mentees gained Bachelor passes, the overall pass rate has improved by 20% and the drop out rate of pupils in the schooling system has improved by 22%.

In 2021, the Nine Tenths programme secured the Talloires Network MacJannet Award for Global Citizenship, this award recognizes exceptional student civic engagement initiatives based in universities around the world. This was the first time a South African University had won first prize.

Engaged Citizenry

Anna Talbot Kinsler is the Nine Tenths Coordinator who has oversight of engaged citizenry programmes at Rhodes University.

"In many senses, the programme grew out of the traditional volunteer model, where people would give up their time and then be connected with a community partner," she said.

"But at Rhodes University, the engagement is actually much deeper. That's why we call it 'engaged citizenry', because our community partners have a lot more to do with the teaching of our students. These partnerships become mutually beneficial and transformative in nature.



Thandiwe Matyobeni, the manager of the Social Innovation and Enterprise Development Hub at RUCE. Photos: Chris Marais.



Dr Rene Oosthuizen is an Engaged Research academic and coordinator of the Engaged Citizen Programme at RUCE.

The mentors, who are drawn from various faculties of Rhodes University, sometimes come from the former-mentee group and most have experience working in other RUCE volunteer programmes.

"Nearly half of our student leaders are past mentees," she said. "And now it's really gratifying to see former mentees graduate, some of them even doing Postgraduate studies."

In her schooldays in KwaZulu-Natal, Anna Talbot Kinsler had been a member of the Scouts South Africa organisation, and when she came to study at Rhodes University, she wanted to sign on with a local scout group.

"There was no scout club in Grahamstown (now Makhanda), but the St Mary's Development Care Centre was on the lookout for something their boys could do. So a couple of friends and I started a scout group, which continued through my undergraduate years.

"I became involved as a volunteer in Early Childhood Development (ECD) and in my final year of studies, I was voted Rhodes Volunteer of the Year. So the next step was to join the Nine Tenths programme, but still maintaining my interest in ECD."

A Two-Way Street

Chido Chatikobo comes from Lydenburg in Mpumalanga Province, and is studying Pharmacy at Rhodes University. She began her mentoring journey in 2022 and has progressed to the position of student leader.

"The great thing about RUCE is that there are so many volunteering options," she said. "I began in the BuddingQ Literacy programme, working with little children, but found I didn't have the patience to manage with that age group.

"So I joined Nine Tenths, mentoring Matriculants. As I went, I realised that this kind of mentoring is something I would personally have welcomed at school: the support, the advice,

the study tips and the general guidance. The programme taught me how to have patience, with my mentees and with myself.

"I also realised that much of the advice I was giving my mentees also applied to my student life. I began to practise what I was preaching, and soon my own marks began improving dramatically.

"I'm generally a very shy person, but the Nine Tenths programme helped me break out of that mental space and gave me confidence. It was a great learning process, for all my mentees and for me."

Chumani Nelo is a former mentee from Mary Waters, who is now also a student leader.

"I tell the learners that I was also once one of them," she said. "The Nine Tenth benefits are a two-way street. Both sides benefit, in personal and academic areas. Sometimes, when I was stressed about studies some of them could end up counselling me. When I was mentoring, I felt like I was learning something new every week."

Both Chido Chatikobo and Chumani Nelo have had mentees admitted to Rhodes University - and are justifiably proud of them.

The UNESCO Connection

RUCE is connected to the UNESCO Knowledge for Change (K4C) Global consortium, one of twenty-three (23) training hubs in sixteen (16) countries, scattered around the globe.



Chumani Nelo, Student Leader in the Nine Tenths Programme.



Chido Chatikobo, Student Leader in the Nine Tenths Programme.



Anna Talbot Kinsler, RUCE coordinator.
Photos: Chris Marais.

Its declared purpose:

“As a global training partnership between higher education institutions and civil society organisations, the K4C programme expands individual and institutional research training capacities, building and mobilising new knowledge for community change.

“Its overall objective is the generation of new co-constructed knowledge to address critical issues facing local communities through research capacity development, centred on community-based experiential training.”

Di Hornby explained further:

“The purpose of the South African K4C Southern Hub is to design and conduct educational programmes to develop research capacities for the co-creation of knowledge through collective action by practitioners, community-based researchers, community groups and academics.

Science with Society

Dr Jessica Cockburn is a Senior Lecturer in Environmental Science. Her PhD, which she completed in 2018, was titled: *Stewardship and Collaboration in Multi-functional Landscapes: A Transdisciplinary Enquiry*.

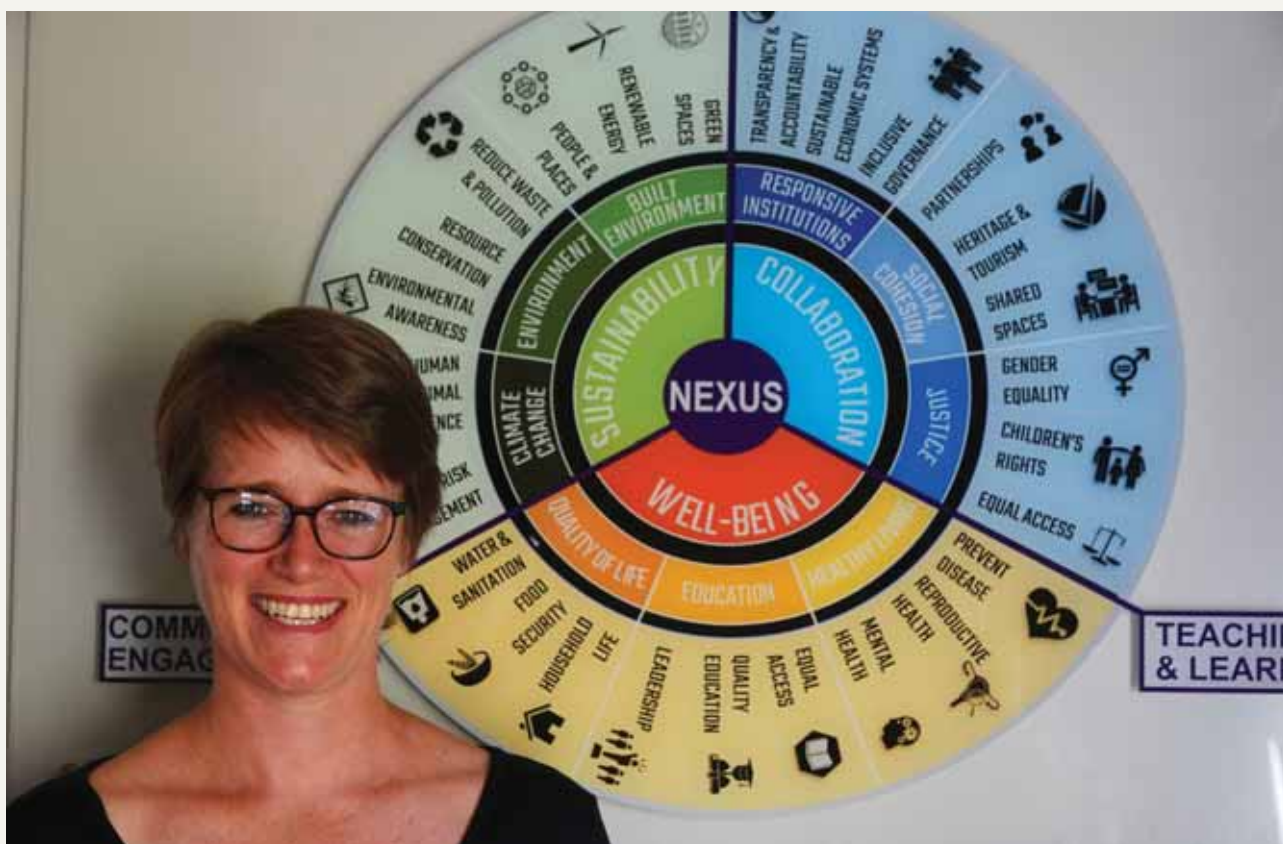
Dr Cockburn grew up on a farm in KwaZulu-Natal. Her mother was a teacher who did a lot of community work. Her father was a farmer and a conservationist.

“My upbringing shaped me,” she said. “I came to Rhodes University in 2015 to begin work on my PhD, and that was a very important stage in my life. I understood that being an academic meant pushing the frontiers of knowledge, but I was particularly keen on doing that in an engaged way that was relevant to society.

“The term ‘trans-disciplinarity’ was a really helpful framework for me. It means science with society, science through relationships, science that is responsive and adaptable, taking its questions from society and developing resolutions and answers with society. It disrupts the entrenched model of technology transfer, where you develop knowledge in the university and then expect people out there to just take our knowledge and put it to work. That is all about producing knowledge for the sake of knowledge.

“In my PhD, I was looking at different people and landscapes, how to work together to manage landscapes more carefully, more responsibly. I worked with a number of NGOs on six (6) different South African case studies, consisting of rural land users and commercial farming communities. It was a collaboration of looking for answers to various questions.”

The ‘science with society’ concept also involves learning about issues like complex adaptive systems. Dr Cockburn used her work with the Makhanda-based River Rescue NGO as an illustration of complex adaptive systems.



Dr Jessica Cockburn from the Department of Environmental Science, recipient of the Vice-Chancellor's Distinguished Community Engagement Award, 2023. Photo: Chris Marais.

"If you put your gumboots on and pull on your long red plastic gloves and try to clean up the filthy river system in this town, you will certainly smell what a complex adaptive system is," she said. "Our rivers are a mess, and so getting people into the literal filth of complexity is important - and, of course, often hard to do. It's also uncomfortable for the environmental scientist, because you're expected to be a problem solver."

"And sometimes, you have to go against your problem-solving instincts as an academic, and admit that you don't have the solution. You have to be part of a collaborative effort to get there."

Dr Cockburn was awarded the Vice Chancellor's Distinguished Award for Community Development for 2023. Her citation read:

"Dr Cockburn was initially 'just a volunteer' at River Rescue, a small, local volunteer-based organisation which started in Makhanda in early 2020 to clean the rivers in the city of Makhanda. The aim of River Rescue is to restore the link between our rivers and our people."

"Dr Cockburn's role is now facilitator of a learning partnership between River Rescue and the Department of Environmental Science. Environmental Science Honours students participate as volunteers in clean-ups, they bring their knowledge of environmental science into discussion and planning of River Rescue activities, students develop their own specific projects to benefit River Rescue, such as social media campaigns, mapping activities, and educational outreach activities."

River Rescue founder Helen Holleman said:

"The hands-on exposure of the Honours students to the realities of the local watercourses and the lives of the people who live along them makes real the theory of systems thinking and often compels reassessment of one's understanding and assumptions."

"Working side by side with members of the community, listening to their problems, seeing the daily reality of the difficulties they contend with provides life-lessons that no theory can provide."

"Jess' involvement with the River Rescue programme has been profoundly beneficial in strengthening links between the University and community and in transforming the direction of the programme; it has brought direct educational (and practical) benefits to both the community and the Honours students, and has introduced new, reflective ways of thinking about the links between people and their environment."

Di Hornby said:

"The award Jess has won is the highest honour we can bestow on anyone in the University in terms of engaged teaching and engaged research. She has mastered working in what we call The Nexus, where teaching, research and community engagement intersect in the context of your community. She integrates service learning into her courses, then collects data and writes about it - the scholarship of engagement. Her work is beautifully integrated."

The Anchor Institution

The RUCE office vision is to build community-university partnerships through which the University can contribute to the revitalisation of Makhanda, aiming to transform it into the city of education excellence in South Africa. We recognise its an ambitious goal but based on what we have done over the past nine years, we believe it is achievable!

Rhodes University has a large stake in the city of Makhanda because they are 'anchored' in the community so we need to use available assets to help rebuild the economy which is, in the main, education.

The Anchor institutions concept emerged in the US in the 1960's as a way of revitalising the economy, by contextualising the idea for our country, it can play an important role in stimulating community conditions through multi level community building strategies. "We use community engagement to ensure we anchor ourselves, connect our academics to the spaces where they are needed."

Dr Jessica Cockburn added:

"It's easy to get into the rut of complaining about local government. However, our system of engaged research, teaching and learning is disrupting the old narratives and creating many opportunities for growth. We create positive experiences in which students become part of the solution."

- Chris Marais

The Journal

Dr Margie Maistry is Editor-in-Chief of the *African Journal of Higher Education Community Engagement* (AJHECE), the first Community Engagement journal in South Africa. The first issue was released in November 2023.

AJHECE is an online open access journal hosted by Rhodes University focussing on research addressing topics on social injustice, poverty, corruption, inequality, unemployment and epistemic injustice, among other social and economic issues. The Journal was born out of the firm belief that Community Engagement has a significant role to play in the repositioning of Higher Education in South Africa, Africa and those countries across the globe that choose to learn with and/or from Africa. The birth of the Journal marks a significant milestone in the quest to deepen and strengthen our understanding of community engagement theory and praxis.

As Dr Maistry stated "The focus of the journal is to address topics on social injustice, poverty, corruption, inequality and unemployment, among other social issues".

It provides a forum for researchers, scholars, community and institutional practitioners and policy makers. Its stated aims are to contribute to and grow the body of knowledge on community engagement in Africa, embed community engagement in all University activities, advance collaborative research and share this with the rest of the continent.

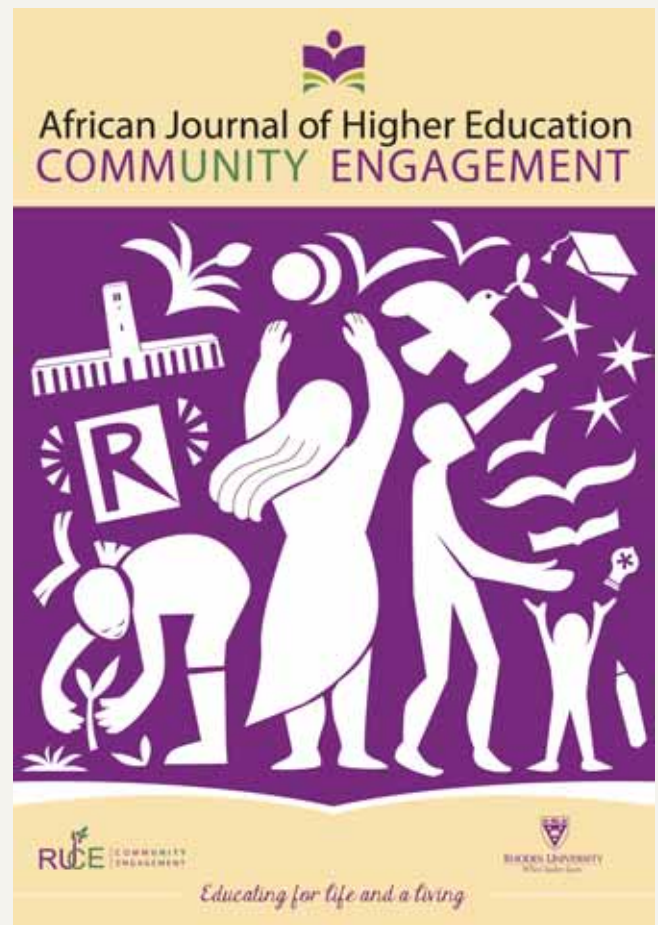
Dr Maistry is recognised as being one of the most experienced practitioners of community engagement in South Africa. She is widely published on the subject, and supervises Postdoctoral Fellows in Community Engagement and Development.

"I've been in community development since the 1980s," she said. "It was the apartheid era, and I worked with NGOs that were involved in the Struggle movement - it was quite different to how we now work with communities."

She then went to New Zealand and taught Community Development at the University of Waikato.

"Working with Maori communities and learning their culture was a wonderful growth experience for me. Then I was hired by Rhodes University's Department of Social Work and Social Development at their East London campus. That's where I developed the Master's programme in community development.

"I moved to Grahamstown and became Director of RUCE for some years. I am now the journal editor and a Research Associate at Rhodes University."



Rhodes University Community Engagement's inaugural issue of the *African Journal of Higher Education Community Engagement*.

Photo: RUCE.

Dr Maistry said although the focus of the journal would be on African higher education community engagement, it would still build working relationships with its counterparts overseas.

"In the South African research context, the concepts of knowledge democracy, the co-creation of knowledge are not that well known," she said. "Traditional research is the academic who goes into the communities from the faculties of social sciences and humanities, collates the data, does the analysis, and then publishes a paper for publication.

"But what we're trying to bring in, through engaged research, are community voices, and an acknowledgement that there are different types of knowledges. Communities have their own knowledge base about their lives. We want to give voice to them, and co-create knowledge with them as a way of building a knowledge democracy."

- Chris Marais

Into the Community

It's early afternoon in Joza township, Makhanda. In the distance are the spires of the Cathedral of St Michael and St George, and the Rhodes University campus, surrounded by tall trees. From this visual aspect, the words of **Ken Ngcoza**, Emeritus Professor in Science Education at Rhodes University and Chairman of GADRA, come to mind:

"As a young boy growing up in Victoria Road, Fingo Village in Grahamstown, I had the best view of the Rhodes University campus," he said. "All the way down from the Drostdy Arch, the administration buildings and beyond, the university precinct gleamed in the early morning light. That was the *Promised Land* where, as black students under Apartheid, we were not allowed."

Today, we drive with Di Hornby to the Assumption Development Centre (ADC), which used to be a clinic run by the Assumption Sisters. These days it is a business and skills development hub, working in partnership with various departments at Rhodes University, the Grahamstown Business Forum, National Arts Festival and the Makana Municipality.

As we walk in, the learners of Second Chance Matric are concentrating hard on maths theorems, there is a counselling session going on in one of the rooms, a stokvel meeting in an old classroom and overall, a general buzz of purposeful activity all the way down the long passage, flanked by room after room. At the centre of it is ADC manager **Masonwabe Nduna**, AKA Maso.

Maso was raised in Fingo Village. He did his primary schooling down the road, and then went to high school at Gill College in Somerset East, where he was known for his rugby prowess. He completed his BCom through Rhodes University.

He is at the heart of ADC, which fosters and helps learners and aspiring business people in the township. He and Di Hornby have walked a long way together.



Second Chance Matric Programme. Photo: Chris Marais.

Second Chance Matric enables those who didn't get good enough marks to rewrite their matric in order to get into a TVET college, a University or a job. There is a computer course they can do through ADC, as well as a life skills course and a work skills course.

The **Work Skills Course** teaches the youngsters how to build their CV's, behave in the workplace, how to communicate professionally. They are helped to get their Learners and Drivers Licences. There is psychological support through the newly established Counselling Centre managed by Rhodes University's Department of Psychology students. They learn to develop a resilient attitude, to be positive, not to give up.

There is also **career guidance**. Part of it is being placed with local businesses as an Intern who don't have to pay for them. Instead, they are given a stipend of R1 800 each for working 80 hours in a month. Some employers top that up as well. But they get work experience and exposure to potential employers.

ADC also offers **small businesses a way forward** in terms of upgrading equipment (as we'd later see at Bob's Upholsterers).

The **Masakhe Enterprise and Supplier Development Programme** was established in 2023 by the Rhodes University Operations and Procurement office, RUCE, The Rhodes Business School and the ADC. The partnership aims to accelerate enterprise and supplier development for the mutual benefit of Rhodes University and the broader Makhanda community.

The Masakhe Programme has also sponsored the design and production of signage and business cards for the enterprises they support. And very little of this requires huge amounts of money.

- Chris Marais

Joza Youth Hub

Driving on, we pull up outside a dark, grim, single storey building, neglect written everywhere. This is the old Bantu Administration Building, a place once loathed and left to rot for years. Outside is a sign that says this is the Joza Youth Hub. There are a few youngsters wandering around.

"I just want to show you something," says Di Hornby.

We walk through a side entrance, not knowing what to expect. Inside is a hubhub of music. It's a bit (one imagines) like stumbling into the Juilliard Academy in New York, or onto the set of the *Fame*. In every room, there is something exciting happening. This is another day in the life of the Access Music Project (AMP).

Bridget Harrison of AMP is hunting down sheet music for someone, before taking us from room to room. Opening each door is as exciting as prying open the door of an Advent Calendar. What will we see now?

There is an air of controlled excitement as the children make music. There is magic in the air. Here a piano lesson. There a saxophone workshop. A violin class. A stern man teaches a semi-circle of youngsters how to play the cello. This is Bongani Khunene, the cello player from the Soweto String Quartet. His

little girl is drawing on the whiteboard and stops the class to draw her attention to the masterly squiggle. He smiles indulgently, gives her a hug and then carries on.

"I've only ever seen this in movies," exclaims a visitor.

In other rooms, Awarenet is teaching children IT skills. Somewhere at the back is CSD Toy library where preschool teachers come to borrow toys for their preschools. Outside, there is a casual saxophone jamming session with youngsters and their mentor.

The homepage of the AMP website captures the atmosphere perfectly:

"Engagement with arts provides a space in which children can explore those parts of their selves that cannot be understood through words, and develop critical and alternative ways of thinking and expression. The opportunity to study music formally can open up another world of pathways for children who are talented and aspiring musicians."



Bongani Khunene from the Soweto String Quartet, with his little daughter, teaching AMP learners to play the cello. Photo: Chris Marais.



At the Joza Youth Hub, AMP's Gareth Walwyn teaches two (2) learners to play the trumpet. Photo: Chris Marais.

"Venture down Sani street on a weekday afternoon and you may hear the sounds of Ma Brrr, Yvonne Chaka Chaka, Purcell, Michael Jackson, fanfares, umxhentso, dubstep, Bob Marley, Jonas Gwangwa, or something else you've never heard before.

"Trombones, marimbas, bass guitar, piano, voices, cellos, drums, shouts, whispers, booms, clicks, and screams. It's the sound of young people working, playing; the singing of beating hearts and the creaking of expanding minds.

"Access Music Project (AMP) is an Eastern Cape music education centre connecting young people with their creative identities and opportunities in the creative economy, in partnership with local schools.

"AMP was established in response to the problem of young potential musicians not having access to music studies. In many schools music is not an option for study, and arts in general have little priority. AMP's model is that of a centre where human and physical resources are pooled to serve learners from various under-resourced schools, enabling the creation of a well-equipped, diverse and high quality music programme.

"Engagement with arts provides a space in which children can explore those parts of their selves that cannot be understood through words, and develop critical and alternative ways of thinking and expression. The opportunity to study music formally can open up another world of pathways for children who are talented and aspiring musicians."

- Chris Marais

In every room, there is something exciting happening. This is another day in the life of the Access Music Project (AMP).



At a rehearsal of the Masicule before the National Arts Festival in Makhanda. Some of the choirmasters had their first exposure to performance and music through AMP. Photo: Chris Marais.

Small Business Support

The next day, we pick up Maso at ADC and drive slowly through Joza. He loves his self-appointed mission of identifying small businesses, and sees it as a win-win if he can get them onto the supplier database for Rhodes University.

All the businesses are in the process of being placed on Rhodes University's database of accredited service providers. Maso is helping them all with the paperwork needed, like tax compliance and proofs of bank accounts.

Bob's Upholstery

Bob Budaza (48) started his business in Joza in 2023. He was born here, but had been away for four years.

The two new ADC-sponsored compressors at Bob's Upholstery means he can double his work rate and take on two ADC interns, who then gain work experience.

"We can fight unemployment when we assist people like Bob of Bob's Upholsterers. And these people also become role models," says Maso.



Bob Budaza, of Bob's Upholstery. The Assumption Development Centre helped him and several other businesses with signage. Photo: Chris Marais.

Sis Dambe Laundry

As you walk up to Sis **Dambisa Zenani's** house in Joza Extension 7, you can smell the fresh smell of laundry soap and the comforting thumpa-thump sound of washing machines. There is a load of washing on the line, flapping in the wind.

Dambisa used to be a cleaner at the Rhodes University Chemistry Department. But she always wanted to be her own boss, she says. However, the only entrepreneurial businesses she ever saw in the township were taverns.

"Then I noticed that there were lots of laundries in town, but none in the township. That was in back in 2013. So I started with one washing machine."

A big issue, she soon found, was that she had no tumble-drier. And with Makhanda's changeable weather, she was often left with too many wet clothes and unhappy clients.

She brought a small one, and then a bigger one. Dambisa joined with ADC in 2014, and through them she was able to get two big Speed Queen washing machines, another tumble-drier and three (3) employees.



Sis Dambe's Laundry and owner Dambisa Zenani. ADC helped the business by supplying washing machines and tumble driers. Photo: Chris Marais.

Jus' Aqua

Makhanda has a real problem with drinking water. It is perceived to be unhealthy, because of the city's creaking infrastructure and improper water purification.

Sinethemba Leve uses the tap water and purifies it via reverse osmosis, sending it off regularly to East London to be tested.

He studied at the Rhodes Business School, and worked at the Monument as a Travel and Hospitality Officer. He supplies students, the elderly, delivers to hotels for cooking and drinking. He does tank refills.

Sinethemba has five (5) employees, and ADC subsidises some of their salaries.



JusAqua owner, Sinethemba Leve. ADC has helped sponsor salaries and has upskilled some of his workers.

Photo: Chris Marais.

Sizo Media

Sizo Media, run by **Sipho Zono**, started in 2020, when Sipho lost his job as communications officer for one of the Eastern Cape district municipalities.

He had done a course in Media and Photography through a Film and Television SETA learnership in 2017. Now he was about to be out of a job.

"With my last paycheck, I got a camera."

Cannily, Sipho started focusing on funerals. Since attendance was limited due to Covid-19 restrictions, he live-streamed proceedings. It gave him a huge business boost. Then he bought an arsenal of Canon cameras.

In 2022, he got involved with the ADC. They subsidised some of his staff salaries, which allowed him to take on more projects. The team is now functioning on a fully multi-media basis, and is regularly hired by RUCE for events and to do short format video clips on various projects.

"It is better to have learnt to fish than to have been given a fish," says Sipho. "Through our lenses, our drones and the artistic skills that we have learned, we now can fish ourselves out of the indignities of unemployment."



The Sizo Media team: (front, seated, from left): Anele Qhude and Anathi Madinda. (back, standing): Zingisa Xxe Mgodeli, owner Sipho Zono and Iviwe Haarmans.

Photo: Chris Marais.

Law Faculty 2023 Research Award



Associate Professor Charlene Lubaale
Rhodes University Law Faculty



Associate Professor Charlene Lubaale of the Rhodes University Law Faculty is a long-distance runner, a new mother, a lecturer, an editor and an author who researches and writes about some of the most pressing socio-legal aspects of African life.

For Charlene Lubaale, 2022 and 2023 were whirlwind years.

She completed the process of co-editing and contributing to a seminal book series on violence against women in Africa, repeated the exercise in a book on the International Criminal Court (ICC) in Africa, gave birth to a baby girl called Deborah and, after more than two years of Covid-19 restrictions and online teaching, finally faced her students live in a lecture hall in August.

"Oh, and I joined a local running club here in Makhanda," she laughs. "Just to keep me sane and focussed."



Photo: Chris Marais.

I love teaching, but I am also passionate about research, specifically in the fields of criminal law from a domestic perspective, international criminal law, women's and children's rights.

Her Academic Mission

Charlene hails from the city of Jinja, in Uganda, where she witnessed poverty-related injustices almost on a daily basis. She said:

"I had relatives who lost land; I interacted with women who suffered violence in silence and played with children who were seen but not heard when violence was meted against them. Many around me were convinced that justice was for the rich and wealthy, and because they did not fall within that category, they didn't even bother consulting a lawyer. That sparked my interest in law.

"I love teaching, but I am also passionate about research, specifically in the fields of criminal law from a domestic perspective, international criminal law, women's and children's rights.

"The Rhodes Research Office staff went to so much trouble, and acted so quickly to help me with my book project on *Criminal Justice for Women in Africa* (co-edited with a colleague at University of Pretoria). It has been great to see the support that Rhodes University offers to young academics. The university is really working on helping established and newer researchers to grow."

Years in the Making

Her book projects that came to fruition were *Violence Against Women and Criminal Justice in Africa*, *Sexual Violence and Vulnerability* and *National Accountability for International Crimes in Africa*.

"I was on maternity leave for the first half of the year," she says, "The publishers (Springer Nature and Palgrave MacMillan) were

e-mailing me draft chapters to check. I remember receiving one as I was being rushed into hospital for the birth of my daughter. Thank the Lord for my co-editors (Ashwanee Budoo-Scholt and Ntombizozuko Dyani-Mhango) working with me at the time."

However, the concepts for the first two publications came to her back in 2018.

"Ideas for academic books often come about after being tested in a number of academic papers to see how they would be received," says Charlene. "In 2018 I had the thought of working on a book on violence against women in Africa, a year later I realised this project could actually advance knowledge on the subject. In 2020, I was ready to begin writing."

The Sustainable Goals Series

Springer Nature is a Germany-based academic publishing house with an international reach that has launched a cross-imprint book series addressing and supporting the United Nations' 17 Sustainable Development Goals (SDG).

"In this spirit, the Sustainable Development Goals series is the first at Springer Nature to publish books under both the Springer and Palgrave Macmillan imprints, bringing the strengths of our imprints together," the publishers say.

"Each subseries is guided by an expert Subseries Advisor with years or decades of experience studying and addressing core components of their respective Goal. The SDG Series has a remit as broad as the SDGs themselves, and contributions are welcome from scientists, academics, policymakers, and researchers working in fields related to any of the seventeen (17) goals."

A Case Study

Violence Against Women and Criminal Justice in Africa: Volume I: Legislation, Limitations and Culture, was edited by Charlene Lubaale and her academic colleague from the University of Pretoria, Ashwanee Budoo-Scholt. Both editors contributed a number of chapters to the collection.

The book begins with a case narrative (authored by Lubaale and Budoo-Scholt) of a young woman called Busisiwe, a South African gang rape survivor. The trial, conviction and sentence of her attackers took four years to complete, during which time Busisiwe suffered many disappointments and a degree of secondary victimisation.

Witness statements went missing, the accused were set free for a year, there were protests from civil society, the case was reinstated, her defence attorney turned out to be a fraud, and there were other legal glitches along the way to justice.

"From the foregoing facts, it is undeniable that justice was served - but at what price for Buyisiwe? Violence against women and girls remains one of the most alarming pandemics worldwide," say the authors.

"Research reveals that one in every three women globally has experienced some form of violence in their lifetime. Inevitably, therefore, women are time and again interacting with the criminal justice system in seeking justice."

"However, what are these women's experiences in the justice system like? Are they even approaching the justice system to start with? Irrefutably, a few women are approaching the justice system. The question though is, are they accessing the much-desired justice they are seeking? For many survivors of gender-based violence in Africa, access to justice remains a myth."

The chapter sets the tone in this book with:

"Especially disturbing is the fact that these flaws in the justice system rest comfortably alongside African states' international and national commitment to protecting women against violence. This causes one to take a step back to ponder whether there is real commitment to protect women.

"It does appear like commitment to international standards has become some form of window-dressing by African states. The questions for us as scholars then become: Where do we go from here in a bid to foster the much-needed change on the African continent?"

Contributions came from all over Africa, in the form of top-ranked legal practitioners, criminal justice experts and scholars, in which the "gaps and good practices" are discussed. This collection encourages cross-fertilisation of ideas between the countries of Africa.

Included in the written offerings were a discussion of gender-based violence (including illegal child marriages) in Mauritius; a comparative study of South Africa's and the Democratic Republic of Congo's failure to legally protect survivors of violence; the pitfalls of case-reporting in Kenya; female genital mutilation in the Gambia; domestic violence in South Africa and historical socio-cultural practices in Tanzania which were obstacles to female victims' recourse to the law.

Volume II: Sexual Violence and Vulnerability

The introduction to this section outlines prohibitions placed by various global and regional human rights groups on the practice of sexual violence.

In addition to various General Recommendations of the United Nations is Target 5.2 of Sustainable Development Goals 2030 which aims to "eliminate all forms of violence against all women and girls in the public and private spheres, including trafficking and sexual and other types of exploitation".

"The Protocol to the African Charter on Human and Peoples' Rights on the Rights of Women in Africa (Maputo Protocol) expressly provides for the protection of women from sexual violence," say the editors.

Included in the Maputo Protocol 'protection document' are girl-children, female soldiers, refugees and asylum-seekers, women living with HIV/AIDS, widows, elderly women, women with disabilities and women in distress.

"The Maputo Protocol thus recognises these vulnerable situations as per the Leave No One Behind Principle of the SDGs20 and, in some instances expressly requires States to ensure that women living in situations of vulnerability have access to justice in instances of violence," states the introduction.

"The chapters in this Volume focus on access to justice for women who are survivors of sexual violence, and for those who are in situations of vulnerability. Some of them are case studies from different countries in Africa namely, Uganda, Ghana, Nigeria, Zambia, Malawi, Democratic Republic of Congo, Central African Republic and Eswatini."

Subjects like considering marital rape as a private issue, patriarchy and power imbalances, the difficulties of proving sexual violence in court, rape in conflict areas and the fight against police sexual violence are some of the topics discussed in this collection.

National Accountability for International Crimes in Africa

The third book Charlene was involved in also concerns issues pertinent to the day in Africa.

The introduction begins with a quote from former UN Secretary General Ban Ki Moon:

"In this new age of accountability, those who commit the worst of human crimes will be held responsible. Whether they are rank-and-file foot soldiers or military commanders ... whether

they are lowly civil servants following orders, or top political leaders ... they will be held accountable."

The discussion then veers into the realm of the International Criminal Court (ICC) and the role it plays in bringing global culprits to book.

"But that is just one side of national accountability for international crimes," the editors say. "States are also accountable to their citizens by ensuring that the perpetrators of international crimes are prosecuted and convicted, and to prevent their reoccurrence."

The Rome Statute, to which many African states including South Africa are signatories, states:

"It is the duty of every State to exercise its criminal jurisdiction over those responsible for international crimes. The ICC can only intervene where a State is unable or unwilling genuinely to carry out the investigation and prosecute the perpetrators."

The book discusses the principle of complementarity and the fact that "national criminal jurisdictions are better placed to preside over proceedings considering their proximity to evidence, witnesses and the scenes of crimes in comparison with the ICC.

"While the Court's intervention at first glance came as a threat to state sovereignty, these concerns were soothed by the principle of complementarity which balanced sovereignty with the ICC's intervention."

However, tensions exist between the ICC and the African Union (AU), which stem from the ICC's indictment of sitting heads of state not party to the Rome Statute.

"As a result, the AU adopted several resolutions condemning this move by encouraging its member states not to cooperate with ICC requests and a withdrawal strategy."

The question of the ICC's legal influence on African affairs has been heavily discussed in recent times, in the light of Russian President Vladimir Putin's possible attendance at the 2023 BRICS Summit in South Africa.

Its currency and relevancy make *National Accountability for International Crimes in Africa* a book well worth reading by an interested public as well as the legal fraternity.

Lecturing at Last

Charlene Lubaale joined Rhodes University early in the COVID-19 year of 2020.

"And then, of course, everything was online," she says. "It was quite a challenge, teaching students one has never met in person. We only got back into teaching face-to-face in the beginning of 2022, and that's precisely when I went on maternity leave. So I missed that first semester.

"I returned in August, and prepared myself to teach live at Rhodes University. Although I had lectured face-to-face many times before at other universities, I was now teaching a group of Rhodes University students for the first time. It was very daunting, at first. It seemed like, despite having been in the Faculty for nearly three (3) years, I had now officially joined Rhodes University.

"However, the more seasoned members of my Faculty helped me through this time. I made some mistakes, took on board the student feedback that came my way, and now I feel I've done a lot better. Even though, compared to other universities, we are a small faculty, we are expected to deliver at a very high standard - which is great."

A Season of Reflection

"I am dedicated to exploring the interface between social issues and the law, and how that plays out in practice," says Charlene. "Globally, in Africa and here at home, crime against women is on the rise. We have excellent laws in place, and yet the statistics on gender-based violence have never been higher. What's wrong with the law, and why is it not doing what it's supposed to?

"That's the question I want to explore further. And even though these issues are thorny, and difficult for the legal fraternity to delve into, we cannot keep avoiding them. Our research on the subject is incomplete, and until we interrogate the "why?" we will not bring those numbers down."

"After working on those books and writing many journal papers, I'm in a reflective season right now, of reading, understanding, observing, interacting and growing as a researcher and academic."

- Chris Marais



Associate Professor Dane Brown
Department of Computer Science



Into the Digital Space

To the uninitiated, an hour spent with **Associate Professor Dane Brown**, of the Rhodes University Computer Science Department, reveals the positive side of Artificial Intelligence (AI) - and a whole new lexicon that goes with it.

To produce successful AI systems, computer scientists need massive amounts of data at their disposal. In the case of Professor Dane Brown, who specialises in Computer Vision and Machine Learning, it's all about finding a feasible solution for making sense of billions of available images, in video or still form.

"Computer Science, right now, is one of the biggest, most rapidly expanding fields I've ever seen in academia," he says. "Through Computer Science, one can create systems that are practical for real-world use across many sectors. And it's also one of the fields with the highest affinity for collaborations.

"Any general computer scientist should have the ability to scrape large amounts of data from the web, using automated techniques, literally to mine data, and make sense of it."

In 2022, former Rhodes University Dean of Science, Professor Tony Booth, orchestrated a remarkable collaboration between



Photo: Chris Marais.

Professor Brown's department and the South African Institute for Aquatic Biodiversity (SAIAB).

"Together with the SA National Biodiversity Institute (SANBI), this collaboration has provided great opportunities for attracting Postgraduate students," says Professor Brown.

"It has also extended the boundaries of AI algorithms, as performing object detection, counting, tracking and classification of aquatic life in diverse environments is a non-trivial problem with much scope for growth.

"This collaboration has also solved a machine learning engineer's greatest problem: acquiring data. Hence, my more recent focus is on aquatic species in different habitats and modelling them without needing to re-train a system for each new environment. This work-in-progress not only contributes to conservation efforts, it also makes possible the creation of scalable AI solutions that can operate across a wide range of domains. The technical AI term for this is 'transfer learning'."

The Lockdown Gardener

During what he describes as a "side-effect of the COVID-19 lockdown gardening" period, Professor Brown also worked on using thermal and multispectral imagery on plant dehydration and early disease detection before visible symptoms.

"This was applying AI to the agriculture domain," he says. "By developing models that can detect subtle changes in plant health, this research has the potential to positively impact how farmers and researchers monitor crops, enabling early interventions that can save yields and resources. My current focus in this domain is early detection of the devastating Wheat Stripe Mosaic Virus, especially relevant as it appears to be making its rounds in South Africa."

An example of one of his research papers in this area is titled *Tomato Disease Detection Using Multispectral Imaging with Deep Learning Models*.

"Identifying plant diseases plays a pivotal role in managing plant health. It poses significant challenges due to the diverse manifestations of diseases. This study investigates the impact of environmental conditions and imaging factors on analysing multispectral images captured through six filters spanning various portions of the Near Infrared spectrum for tomato disease identification."

A Technical Bent

Dane Brown was born and raised in Cape Town, attending Bellville Technical High School.

"Maths, Physics and Chemistry were my strongpoints," he says. "I struggled with most of the other subjects. Then I got a bursary to study Computer Science at the University of the Western Cape (UWC). I was also into electrical engineering, but I chose the former course."

"In my undergraduate years, I did quite well in Information Systems (IS), which is primarily about data and using tools created by computer scientists, often in the context of organisations. IS specialists may not necessarily understand or use algorithmic thinking. I wanted to go deeper by designing and implementing computer programs."

Once he reached his third year of undergraduate studies, Dane Brown made the radical choice of majoring in Maths, IS and Computer Science.

"Although I wasn't a great student, I persisted and did quite well in some of the Computer Science subjects," he says. "But then I managed to secure a good Telkom bursary for Honours and, because I could choose all my favourite subjects, I started regularly getting distinctions. I dropped the subjects I had struggled with, and stayed with the ones I liked."

"I was good at subjects like networking, image processing and machine learning, because I really wanted to do them. And that, today, is my philosophy with the students I supervise: do what you love."

The Sign Language Project

Still at UWC, Dane Brown completed his Master's degree in 2012. He focussed on South African Sign Language (SASL), laying the foundation for real-time human-centred AI applications.

"I prototyped a system that mimicked human movement by training a machine learning model on a GPU (graphics processing unit, used in gaming, graphics and video rendering), eventually rendering in real time using an ordinary webcam (15 frames per second) or a Samsung Galaxy S3 phone camera."

"Initially, my supervisors and I found it quite difficult, mainly because we knew no sign language. But, being more of a technical person, I took the route of making it into a practical system. We ended up with a version of a system that could recognise different signing postures and translate the output as text or as a humanoid animation."

"I would literally stand in front of the camera, make the physical movement and a humanoid on the computer screen would copy me exactly - and in real time. What enabled us to do this in real time was the specialised graphics card. Most people who have heard of graphics cards associate them with gaming programmes, but the specialised ones have accelerated computing by thousands of degrees. All the AI enthusiasts are grabbing something that was initially designed for gaming."

Dane calls that kind of work "medium level programming."

"That's the hardest part of computer science," he says. "It's new technology and you're laying down the baselines. Over the years, software development teams have come together

and created interfacing at a much higher level. Back in 2012, I would create something that took 300 lines of code. Five (5) years later, I could do the same job with only one line."

The Language of AI

The jargon of Artificial Intelligence (AI) is growing as exponentially as the field itself. Here's a sampler:

- **Algorithm:** a set of instructions used to tailor the way a machine learning model learns for a particular AI application;
- **Alignment:** the extent to which an AI's goals are in line with its creators' goals;
- **Big Data:** complex datasets analysed to extract valuable insights. e.g advertising on Fridays will maximum profits;
- **Chatbot:** a computer programme that can have a conversation with humans via text or voice;
- **Computer Vision:** a field of study that focusses on how computers can understand images and videos;
- **Deepfakes:** AI-generated content such as images, videos and sound designed to look real;
- **Hallucination:** when chatbots that use large language models (GPT) or other generative AI models confidently present false information;
- **Machine Learning:** a field involving algorithms that enable machines to learn from experience, without requiring the help of a human being;
- **Neural network:** a series of algorithms that mimic the neurons in a human brain to recognise and work with data;
- **Python:** a popular high-level programming language used for general programming often preferred for its conciseness.
- **C:** a medium-level programming language that is foundational for much of the applications we use today.

Human Biometrics

For his PhD through Rhodes University, Dane Brown immersed himself in the field of human biometrics, mastering both the theoretical and practical aspects of image processing and machine learning techniques, especially those applicable to face, fingerprint, palm and iris recognition.

Some of the papers he collaborated on included studies on network intrusion detection systems; automated suspicious activity detection via multiple camera feeds in places like parking lots; poacher detection and wildlife counting systems; vehicle retrieval through robust licence plate detection and countering attacks from the Dark Web.

"I was a Visiting Professor at Warwick University," he says. "From that time, I began to use Deep Learning algorithms to produce more accurate biometric systems. This work not only contributed original research to the field of biometric security but also deepened my interest in creating AI systems that are both robust and adaptable to varying conditions. This was an understudied area at the time: palm-print identification using Deep Learning with a novel image registration algorithm."

The Fun Stuff

A quick glance through various papers Professor Brown has worked on with colleagues will also reveal a lighter touch to his range of computer science research.

For the health-conscious, gym instructors are not always affordable or available.

“The Fourth Industrial Revolution and the continuous development of new technologies have presented a golden platter for sedentary living,” said Dane Brown and Mixo Ndleve in a 2019 telecoms conference presentation.

“Non-communicable diseases such as cancers, cardiovascular and respiratory deficiencies and diabetes have reached epidemic levels as a result. A traditional gym instructor screens clients to prescribe exercise programs that can help them lower the risk of non-communicable lifestyle diseases.

“However, gym instructors often come at a cost and are not always affordable, available or accessible. This research investigated whether modern computing power can be utilised to develop a system in the form of a cost effective alternative exercise program-Virtual Gym Instructor. The system demonstrated perfect real-time object detection and tracking up to four metres away from the camera and produced results for distances up to eight metres away.”

Other papers deal with the analysis of golf swings via computer vision, and tracking and identifying Great White Sharks in the waters around Cape Town.

The Supervisor

Asked about whether a high-paying job in the private sector occasionally tempted him, Professor Brown laughs and claims to be “virtually unemployable outside of academia”.

“Supervision is my passion,” he says. “There’s a student drought in the Science Faculty, so for Computer Science I try to leverage my enthusiasm to keep students engaged early during undergrad.

“I get my Postgraduate students involved in lecturing my courses, keeping them up to date.”

And when he speaks about their various research projects, it’s clear to see there’s a certain magic alchemy attached to the general concept of AI, especially its technical foundation in machine learning.

“Students often ask how I manage to find time to produce so many models across different domains. My answer is: ‘When I see a fish swimming, I see a hell driver on the road.’

“What I mean is that the swimming motion of a fish is as unpredictable as the actions of a hell driver. Bridging the gap

between the predictable and the unpredictable is a constant battle in computer science.”

Dane supervises diverse AI projects. Two (2) MSc students are developing habitat-agnostic models for aquatic species, eliminating the need for retraining in new environments. Another MSc student is integrating computer science and chemistry to classify invertebrates, such as marine sponges, with potential anti-cancer properties.

A new PhD candidate is advancing sign language recognition by transitioning from isolated to continuous systems, using pose estimation and transfer learning to gauge speed. Another PhD student is creating methods for automatic concealed weapon detection based on gait and pose estimation. A final-year PhD candidate is working on plant disease detection using a cost-effective multispectral imaging method, evolving from early water stress to early disease detection. Moreover, Dane is co-supervising a music technology PhD project focused on preserving African indigenous instruments like the *Uhadi* through machine learning. Completed projects include licence plate recognition with vehicle re-identification, AI-generated images using diffusion, and adaptive intrusion detection in cybersecurity.

About the AI Revolution

Professor Brown says that the intuitive nature of Deep Learning now means that domains no longer have to be investigated from the ground up.

“Now we can make deductions based on the prior knowledge at hand,” he says. “Aristotle and Plato did not have much prior knowledge to work from back in the ancient days. Now we’re living in a world where we don’t necessarily have to reinvent the wheel anymore. However, we need to intelligently make use of the things that already exist, transferring knowledge from different sources to create something new. Something that is a lot more effective than if we had just started from scratch.

“As AI develops, computer scientists are creating new things, many of which make life a lot easier for the average person out there. My vision for the future of AI is one where technology not only meets but anticipates the needs of its users, adapting seamlessly to the challenges of the real world, including AI itself.”

- Chris Marais



Associate Professor Liezille Jacobs
Head of Department of Psychology

The Pain and Gain of a Psychobiography

Associate Professor Liezille Jacobs, HOD of Psychology at Rhodes University, has produced a self-revelatory book, fully endorsed by her peers as new knowledge in her field.

The first two decades in the life of Associate Professor Liezille Jacobs, Head of the Psychology Department at Rhodes University, have guided much of her academic interests and subsequent research directions.

Her research focus is on the various forms of addiction, with a special focus on feminist epistemologies, the intersections between race, class, identity, sexuality and gender, and current trends in cyberpsychology and social networking.

"I was born in the old District Six of Cape Town in 1976," she said. "I grew up in Rocklands, Mitchell's Plain and stayed there until the age of ten, when my father moved us to Breidbach in King William's Town (now Qonce) in the Eastern Cape."

The language Liezille grew up with in Rocklands was English; in Breidbach, it was mostly Afrikaans.



"If you spoke English here, you were bullied," she said. "It was like a re-run of the Anglo-Boer War. Coming from a big city to a small town, being picked on for not being able to speak Afrikaans properly, that turned me into a bit of a loner. And I happened to be an introvert anyway.

"We had family in Breidbach, and most of them were lighter than us in skin colour. We were the 'dark side' of the family, which created some kind of barrier between me and my cousins over there.

Liezille's father suffered from alcohol use disorder, and various other members of her family had substance use problems.

"As a result, I never touched alcohol or drugs, because of the great potential that would have to derail my life," said Liezille. "My father's behaviour at the time was a catalyst for my entering this area of research. It was initially very stressful. Then, as I learned more, I realised that addiction is, for many people, something that they are helpless to resist.

"I used to think that he was selfish, because every time it was exam season, that's when he would indulge the most. And then my sister and I often had to go off and study at a friend's house, or spend the night in the school study hall. I know now that he was always very stressed for me at that time - and he never managed stress very well."

But other happenings in the family also stuck in Liezille's memory.

"Thinking back on those things in my academic years, I then realised something that I thought would be new knowledge: the secret alcohol use of women. With men, it's a story you hear all the time. But a story that people don't hear is about women who abuse substances or drink, but they hide it. And I always found that very strange. How can you disguise your smoking or drinking? When you smoke, you smell. When you drink, people can see your behaviour has changed.

"And that became the basis of my PhD: the secret drinking of women, and their barriers to seeking treatment. This launched my career direction of dealing with substance use disorder."

The Research: Mothers who Drink

One of her research papers, published in 2014, is titled '*Bad' mothers have alcohol use disorder: Moral panic or brief intervention?*

In it, she states:

"Societal norms and values take on moral panic and tend to label mothers who drink heavily as 'bad mothers'. This manuscript presents a human scientific approach to access life stories about South African mothers who had a heavy drinking problem and their barriers to accessing treatment.

"The data were analysed using the discourse analytic approach while the social constructionist theory was used to frame the research.

"Findings indicate that besides feeling like bad mothers and being rejected by society because they drink, women internalised a negative gender script that embodied experiences of shame, stigma, guilt and secrecy that contributed to barriers to seeking treatment."

The Research: Alcohol in the Family

The year before (2013) Professor Jacobs co-wrote (with Julian Jacobs) *Narratives on Alcohol Dependence in the Family in Post-apartheid South Africa*.

She used the 'life story interview' method to record the drinking habits and experiences of a group of ten (10) married women and single lesbians.

"This study highlights how alcohol dependence in the context of family developments in post-apartheid South Africa results in inordinately large social, economic and health problems in society at all levels.

"The main research question was: how did your drinking affect your family?

"The main finding was that because Apartheid's policies disintegrated the family system and the notion of Ubuntu was lost, the women were prone to alcohol dependency. The study cautions policy makers to become more aware of the uniquely defined construct of a family and of alcohol dependence in post-apartheid South Africa, and to consider the development of family-based treatment models."

In terms of additional research, Professor Jacobs and her team of researcher-writers investigated areas such as sexuality in women's magazine advertisements, hookah-pipe smoking in the family, and the link between post-traumatic stress disorder (PTSD) and substance use disorder (SUD), guidelines for alcohol abstinence in pregnant women and women's recovery experiences from alcohol use disorder (AUD).

Additional Research Areas

Professor Jacobs' study interests also venture into the realm of popular culture, group lifestyles and social media.

One of her papers is *Can You Save Me? Male Superheroes in Hollywood Film*, co-written with Tia Tyree.

"Film is an important component of society and works to influence how blacks are viewed and constructed in the world," they say.

"Today, as in the past, media are spaces of struggle over power and meaning in our culture as well as mediums where dominant power relations are reproduced. The purpose of this study was to investigate how black superheroes were constructed in films."

"This (Afrocentric) analysis included black superheroes' appearance, language, purposes and missions, performance of their duties, and positionalities in the community."

Another research paper concerned itself with the intersection of medical (SUD) treatment in genderqueer clients.

"The main questions we put to a group of mental health practitioners were, firstly, how gender-inclusive is your treatment centre's intake form and, secondly, how knowledgeable are you about gender diversity?" Professor Jacobs wrote.

Social Media Studies

Another study was entitled *Natural Hair Chronicles of Black Female Vloggers: Influences on their Psychological Well-being*, which she wrote with Anelisa Kelemi.

The study group consisted of ten (10) black female South African YouTube vloggers (video influencers) with frizzy, natural hair. They told Professor Jacobs and her team their stories of how women with Afro-textured hair were seen in the world, and how they were working to change negative perceptions of them.

The 2019 paper entitled *"Inbox me, please": Analysing comments on anonymous Facebook posts about depression and suicide* (Liezille Jacobs and Lane Tao) is self-explanatory.

"Our findings suggested that anonymous-to-visible social media communications may provide some form of social support, which could support e-psychology interventions," the authors state.

Professor Jacobs later said in an interview:

"I have always loved doing research on aspects of the so-called 'underdog' sector of society. That's because I've always been the outlier in my own life, the odd one out, and so I'm drawn to marginalised groups living on the edge of reality. Sub-cultures fascinate me."

Campus Drinking

Some years after completing her PhD at Stellenbosch, Professor Jacobs took her family to Belgium, where she landed a job in social medicine and epidemiology at the University of Antwerp.

"I was mainly working on alcohol use disorder especially among students, because that's a national problem in Belgium," she said. "The legal drinking age in that country is 16, so alcohol is served in university cafeterias. So the kids can, for instance, get beer with their lunch, get drunk and then attend class."

"My research compared alcohol policies on university campuses throughout the country. We found there was no fixed policy on this, because of student protests."

Professor Jacobs returned to South Africa in 2018, joined the Psychology Department at Rhodes University as a Senior Lecturer and was promoted to Associate Professor and Head of Department in 2022.

Rocklands: On Becoming the First Generation of Black Psychologists in Post-Apartheid South Africa

Scheduled to be published in July 2024, the *Rocklands* book project was a personal and professional milestone in the life of Professor Liezille Jacobs.

"I have written the book in two parts," she said. "One part deals only with my personal story. The other part is about the method I use to access my life story and how I systematically went about it. The book is written both for scholars and for other 'Liezille's' out there, experiencing the same thing as I did".

The importance of her book to the field of addiction studies has been bolstered by positive peer reaction to her manuscript. But her main concerns were, and still are, with the reaction of her family.

"My mother, for instance, is very proud of my academic achievements, and the fact that I am writing a book on the subject. But she's not happy with the personal family material in it. My father has died. There are other members of the family who are not happy with this, either.



Associate Professor Liezille Jean Jacobs.
Photo: Dirk Pieters.



Photo: Chris Marais

"But, it's a sacrifice I have made for the sake of the discipline becoming more relevant. This is a auto-psychobiography using the cases of normal people, not famous ones. It has also been a personal journey, trying to make sense of the past and who I am today. The process released a lot of anger and frustration from me, and through it I found a more positive way of looking at those early experiences.

"Reading the book, you'll see my father and I finally made peace with each other. Through my work on this book, I now see him in a different, more understanding light."

The Reviews

The pre-publication manuscript of *Rocklands* was positively peer-reviewed by a number of eminent academics, including **Professor Cheryl Potgieter** of the Durban University of Technology, who said:

"I read the manuscript four times, and I was triggered, troubled, traumatised and totally impressed by this scholarly work which Professor Liezille Jacobs has written, using psychobiography to take the reader on her journey as a young black girl from Rocklands in Mitchell's Plain to being the first black woman heading the Psychology Department at Rhodes University.

"...I am not aware of any other South African scholarly work which recognises how a country's political climate impacts individual, families, communities and then inserts the personal and, dare I say it, the intimate, to produce an academic text of this stature.

"It is a book I wish I had read decades ago, and which I will recommend to all who I mentor and to other mentors and, in fact, to all academics.

Professor Norman Duncan, of the University of Pretoria, said:

"Successfully fusing several narratives, including narratives of the travails faced by black women in academia, and the harshness of life in communities inhabited by those relegated to the margins of society, with Rocklands, Liezille Jacobs offers us a courageous and captivating read. This book is both inspired and inspiring."

Professor Jonathan Jansen, of Stellenbosch University, who wrote the foreword to *Rocklands*, said:

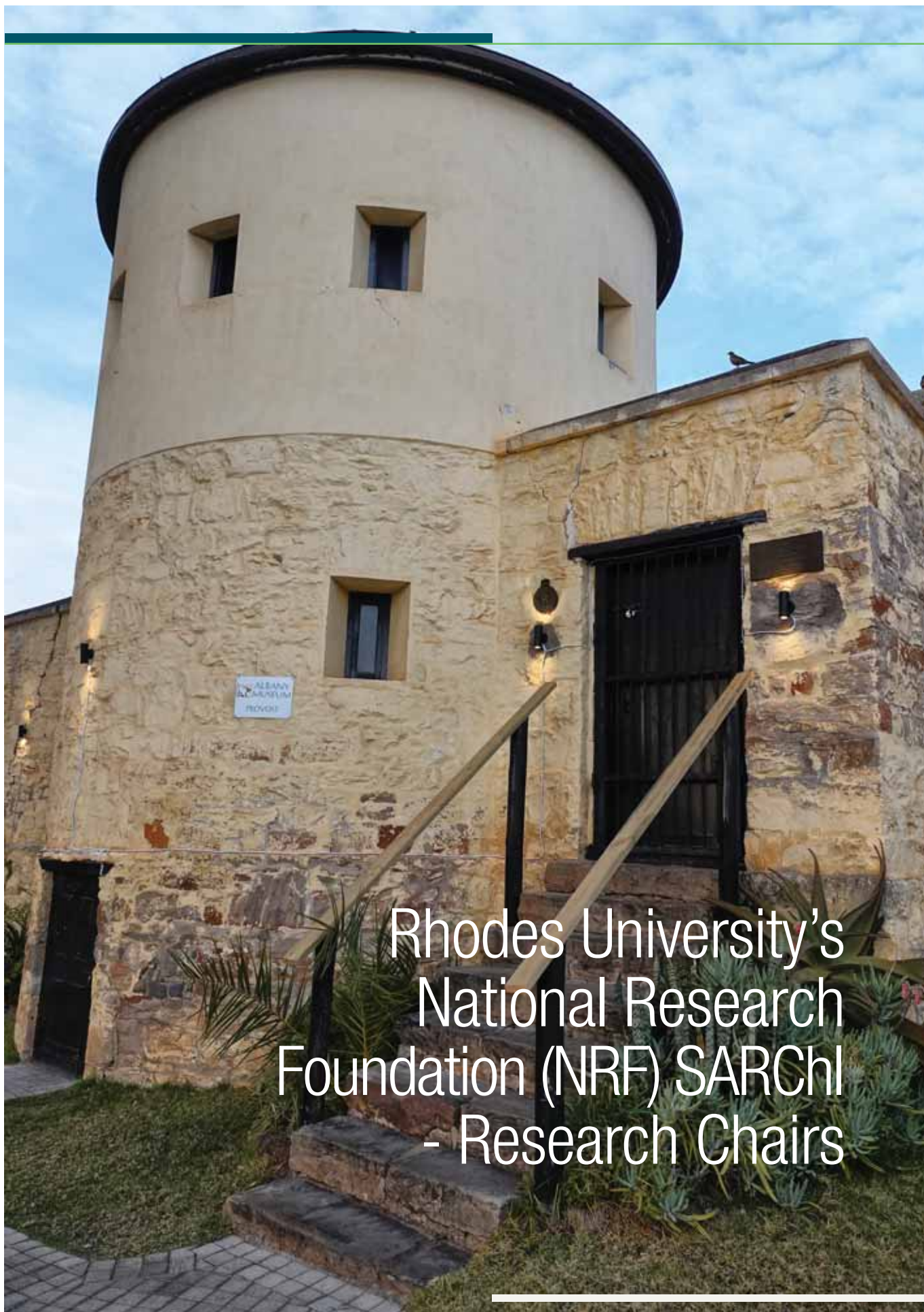
"...When I first read the manuscript, I was excited and disturbed in equal measure. Excited because here was a break with conventional style and method in writing serious academic texts. The academic language was direct and unpretentious. The narrative thread that carried the story was clear and consistent.

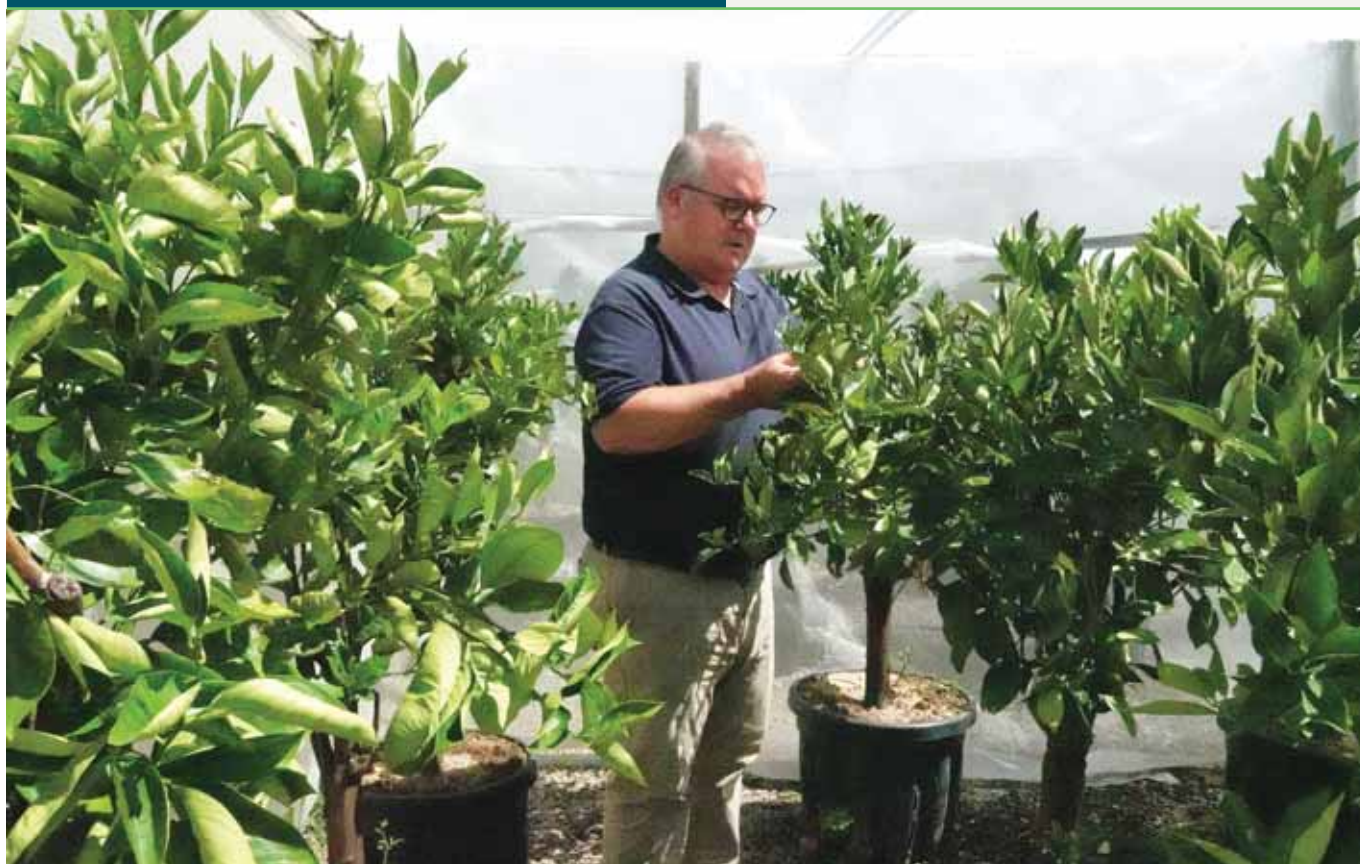
"Some of the elements of a solid psychobiography were evident throughout. This was exceptional academic writing that would no doubt upset the orderly positive appellation that characterises much of academic psychology. Good, I thought.

"Disturbed because of the acutely painful stories being told what a young, black girl, a student, mother, researcher and assistant had to live through in the long and treacherous road to becoming a critical psychologist and, more recently, the first black woman as head of the psychology department at Rhodes University.

"...this intriguing new book will help generations of current and future scholars to map their own paths towards what still is one of the most exciting jobs on the market: a university academic."

- Chris Marais





SARChI: Research Chair in Insects and Sustainable Agricultural Ecosystems

Distinguished Professor Martin Hill
Rhodes University Centre for Biological Control (CBC)

Killer Bio-Agents out in the World

Distinguished Professor Martin Hill, SARChI Research Chair in Insects and Sustainable Agricultural Ecosystems, reveals the remarkable story behind the Centre for Biological Control at Rhodes University, and the latest biopesticide that has proven so effective against the insects that devastate our fresh fruit.

How does Science find answers? Through careful observation and logic? Mistakes? Hard work? Laziness? Brainpower? Sheer fluke? Singular insight? Collaboration?

Maybe all of the above.

In 2023, Rhodes University and its Centre for Biological Control (CBC) patented environmentally-friendly products for use against the destructive codling moth and bollworm. MultiMax and CodlMax are biological pesticides, absolutely safe for every living creature except for the targeted species.

They are part of a massive step forward in pest control. They are an intelligent product for fruit farmers. And the story of how they came into production offers some intriguing insights.



Distinguished Professor Martin Hill SARCHI Research Chair in Insects and Sustainable Agricultural Ecosystem.
Photo: Chris Marais.

Scourge of the Bollworm

"Bollworm is a massive pest of deciduous fruit like apples, pears, peaches and plums. And Europe has a huge industry for organically grown fruit," explains Distinguished Professor Martin Hill, SARCHI Research Chair in Insects and Sustainable Agricultural Ecosystems.

"They do have a virus that attacks the pest, but the bollworm has become resistant to it. Our virus is a resistance breaker, and so the market is huge."

Biopesticides have been around in one form or another since 1938. Unlike chemical pesticides, which frequently poison non-target creatures, biopesticides come from nature and are highly specific.

Finding exactly the right agent, though, entails hard work, educated guesses and fair bit of luck.

Martin tells the story of how the product came to market in a talk he titled: *Have we in Natural Science Lost the Power of Observation and Learning from Mistakes?*

Tale of the Sick Litchi Moth

It started in 2013, with a PhD candidate in the Zoology and Entomology Department, Tamryn Marsberg. Tammy began

rearing litchi moths (*Cryptophlebia peltastica*) as part of her research. But for some reason, she could not keep them alive. Despite her best efforts, she was greeted every morning with the sight of miserably sick larvae, which soon perished.

Research revealed they were infected with a baculovirus. Nothing new there. But this was not the baculovirus that usually infected litchi moths. It turned out to be wholly new to science.

Meanwhile, Dr Michael Jukes, a researcher with the CBC, had been tasked with checking the evolutionary DNA of a certain baculovirus.

According to Professor Hill: "We were looking at the baculovirus in the false codling moth, and we wanted to go back over the fifteen (15) years it had been in culture with our industry partner River Bioscience. It involved a lot of legwork but the University of Gdansk in Poland had a specific machine that could do this fairly quickly, and Michael was convinced this could save a lot of time."

The Department's Polish collaborators, Professor Boguslaw Szewczyk and Dr Lukasz Rabalski, began work in identifying this mystery virus infecting the false codling moth (*Thaumotibia leucotreta*). They too found a novel baculovirus, and before long, it was identified as being the very one that had been devastating Tammy's poor litchi moths.

Gruesome, Yet Elegant

Viruses are some of the smallest entities known to humans, invisible even through conventional microscopes. Yet they frequently have lavishly long names. This one is no exception. It was dubbed *Alphabaculovirus Cryptophlebia peltastica Nucleopolyhedrovirus* but is better known as CrpeNPV.

Viruses can dramatically alter their hosts' behaviour. For example, they can make larvae, which are generally photophobic, crave sunlight.

They make their way to the top of a tree, and there the viruses infecting the body will make the larva explode. The viral pathogens then spread with the wind. If they land on something other than a bollworm or codling moth, they do nothing. If they do encounter their host, they kill quickly.

It is a gruesome, yet elegant, method of distribution.

Don't Say a Word

It soon became clear that CrpeNPV had incredible potential as a highly specific, extremely effective, environmentally-friendly biopesticide. If Rhodes University's Research Office was to patent it, everything had to be kept under wraps. The decision was made to go for the patent.

"It felt quite strange, because as academics, we create knowledge and we disseminate knowledge," said Martin. "Any scientist can tell you exactly how many times each of their papers has been cited because that is their currency, that is what we want."

"Now we were saying, don't say a word. We can't disseminate this knowledge. Tamryn Marsberg had to publish her Doctoral thesis under embargo."

The CBC, along with research partner Citrus Research International and industry partner River Bioscience, began the process of patenting the product in 2017.

"Rhodes University's Research Office was absolutely brilliant. Their approach was refreshing and they were so supportive."

Have Faith in Science

"Also, the beauty of this whole thing was that at no stage did Tammy or Michael walk into my office to say 'I'm so over this' when they ran into difficulties. They came in and they told me that what they had been doing hadn't worked, but they were going to follow this down a path. And to me, that persistence, the power of observation, and learning from mistakes - these were really the big take-home lessons here."

It was not all smooth sailing.



Photo: Chris Marais.

"We had an appeal against our patent in Europe by a very large bio-pesticide company and that did two things. Firstly, it made us terrified to go to court in Europe because of what it would cost. Secondly, it confirmed to us that we might be onto something. They questioned our patent based on prior knowledge, saying that this had appeared in a talk one of our students gave, but we were able to prove this was not the case. It was novel knowledge, and that is what you need for a patent."

"One of the lessons I teach my students is: have faith in your science. If it's there, it's there. Don't be talked out of it, but also, don't leave your science at the lab bench."

The global patent for CrpeNPV is now complete, and the River Bioscience is registering and commercialising MultiMax and CodlMax across the world. The product, which is sprayable, is already being used by farmers in South Africa and is soon to be registered in Europe.

Before the patent process started, Martin Hill and others from the CBC consulted with the Business School at Rhodes University to ensure they were maximising possible profit and minimising risk.

"And fortunately, one of the guys we work with at River Bioscience had done his MBA through Rhodes and had actually studied the CBC model as part of his studies."

As the products spread around the world, royalties will accrue to the Centre for Biological Control, making it more sustainable as an institution.

- Julianne duToit

The Story of the CBC

The Centre for Biological Control (CBC) was started in 2017, when the national Department of Fisheries, Forestry and Environment (DFFE) was regularly soliciting the help of various universities around South Africa for weed control.

The administrative load and paperwork needed to obtain government funding was onerous for each institution.

“So, we decided to bring a consortium of universities under a single umbrella. What that meant was that DFFE and other funders had a single point of contact, and there was one contract. It made things much easier,” explained Professor Martin Hill.

“The beauty of having a Centre, rather than an Institute, was that we were housed in a Department, and we wanted that, because we then we could still have a pipeline of students coming through.”

The CBC now has thirty-five (35) staff and thirty (30) Postgraduates, based all over South Africa and funded from external sources. It includes the University of Cape Town, the University of KwaZulu-Natal, Fort Hare University, the University

of Pretoria, the University of the Free State, the University of Mpumalanga, and the University of the Witwatersrand as well as the Agricultural Research Centre and Citrus Research International.

Since 2017, the CBC has published two hundred and thirty-five (235) papers, fourteen (14) book chapters, and two hundred and fifty (250) publications. It has graduated fifty-three (53) Master’s students and twenty-four (24) PhDs.

“And that’s despite the fact that we haven’t had DFFE funding for the last three years,” said Martin.

“The SARChI Chair is the spine of the Centre, because the Chair is all about insects and sustainable agricultural livelihoods. So, it does both insect bio-control and weed bio-control, and it allows us to leverage funding from other local and international sources.



False Codling Moth, a pest of citrus, being reared in the laboratory on an artificial diet. Photo: Chris Marais.



Nandipha Ngoloti of the CBC's Sisonke team, collecting biological agents of water hyacinth.
Photo: Chris Marais.

“On the agricultural side, we get really good funding from Citrus Research International, and we have an industry partner, River Bioscience.

“On the weed side, we always had this big pot of money from the DFFE. That’s gone now, but what we did, when we saw the writing on the wall, was to send out a simple email to our collaborators around the world. There are a lot of plants that are native to Africa that are invasive in the Americas, Australia and New Zealand. They find it a bit daunting to work in Africa, but we can.

“For example, a lot of our grasses have become problematic in Texas, and the Lee Bass Foundation are paying us to help combat their spread. What helps is that its international money coming in, which translates well into our currency, and we also have an incredible footprint of ex-students now based throughout Africa.

Mass Rearing the Enemies

“But we don’t want to just become a service organisation for other nations around the world. We still want to work on invasive alien species locally. So, we use some of the foreign funding to reinvest in where we’re going right now.

“We have had to envision the CBC without DFFE money and we should be fine. But unfortunately, one of the programmes we’d have to look at critically if local funding doesn’t come through, is the mass rearing of biological control insects.

“We are all very reluctant to do that, although implementation is not something that sits within a university’s mandate. It should be spun off into government structures, into extension work. But that doesn’t exist at the moment, so we’ve been doing it.

“Through mass rearing the enemies of invasive plants, we employ a lot of people, specifically those with disabilities. It creates sustainable job creation opportunities and is very well suited to people in wheelchairs and on crutches. It’s delicate work, but doesn’t require very specialised skills.”

There are now several such stations, including one at Waainek just outside Makhanda, and another at Kariega, at Hartbeespoort Dam in Gauteng and now Upington and soon another three on the Vaal River. Here the Centre sets up protected tunnels and tubs in which the target plants are provided as food for the insects. When the time is right, the insects are simply vacuumed into containers and taken to where they are needed.

“It’s a numbers game,” says Martin Hill. “We could put a handful out and then sit back and wait for them to breed up on their own but if you are talking about Hartbeespoort Dam after winter, the plants get going fast because of the nutrients (sewage) in the water, and the insects take a while to catch up. If you’ve been rearing them, you give them a head start. Essentially you’re using them as a green herbicide.”

- Julienne du Toit

Bitter-Sweet Tale of the Honey Mesquite

The honey mesquite tree (also known as *Prosopis glandulosa*) was brought to South Africa from the Americas in the late 1800s. It was chosen by agro-foresters who were looking for a hardy tree that would thrive in the arid, sparsely vegetated parts of the upper Karoo and Kalahari.

Prosopis fit the bill perfectly, offering palatable pods, shade and wood. So sought-after was it, that the honey mesquite and velvet mesquite were still being actively planted in the 1960s even though it was clear that the tree was problematic.

The mesquite is mostly fine when they are single-stemmed trees, spread out across the plains as they would be in their native home of the Americas.

It is mostly when it grows in dense stands, “a jungle infestation,” as Professor Hill calls it, that it becomes a serious issue, particularly when they are next to or in river courses.

“You can’t get in there, you can’t move around. It’s thorny. The animals don’t even get access to shade, and the water disappears.”

This is because its root system can stretch down 70 metres. It lowers the water table and in so doing, outcompetes other keystone trees, notably the Camelthorn (*Vachellia erioloba*).

It is a particularly vexing problem in the arid zones of the northern Karoo and Kalahari where it was most intensively

planted. Farmers in the Northern Cape blame *Prosopis* for the dwindling of the rivercourse at Vanwyksvlei, site of South Africa’s first state-built dam, completed in 1884. For decades, the dam was used for irrigation, and even boat rides. Now it is mostly empty.

Mesquite seeds are spread by browsing animals and occasional floods and they have become a major problem all over the African continent. Apart from South Africa, they are also an issue in Namibia, Botswana, Kenya and Tanzania.

Although animals do find it palatable, the mesquite pods are the equivalent of junk food for livestock. The sugar levels are so high in the pods that sheep and goats are starting to suffer from tooth decay, according to Professor Hill.

The same is happening with cattle in Kenya. Camels are even contracting diabetes.

The livestock have little choice but to eat it, because of course, once *Prosopis* takes hold in a landscape, it outcompetes all else.

How the Podlet Weevil can Raise Water Levels

But the CBC found an effective biocontrol agent: the *Prosopis* podlet weevil from South America (*Coelocephalapion gandofo*). This species lays its eggs within immature *Prosopis* pods and the developing larvae destroy the young seeds before they can ripen or germinate.



Infestation of honey mesquite in the Northern Cape. Photo: Chris Marais.



Vanwyksvlei in the Northern Cape is one of the many areas in the region that struggles with *Prosopis* invasions. Photo: Chris Marais.

The first six hundred (600) healthy podlet weevils were released in late 2023. Eventually, if they continue to thrive, *Prosopis* or Mesquite will die back to manageable levels. It will never completely disappear. But hopefully more camelthorns and other indigenous trees will survive.

Using podlet weevils is the ideal way of tackling the pest tree within the newly proclaimed Meerkat National Park, former farmland that now surrounds the Square Kilometre Array Radio Telescopes. Using chainsaws close to the radio telescopes will create massive radio frequency interference (RFI). But podlet weevils do not disturb the work of radio astronomers.

"It costs a million rand a year to identify and test a biological control agent like the podlet weevil. But the difference it will make, just in the water levels in the Northern Cape alone, will be absolutely phenomenal."

Something more radical may be needed in the short term, though.

"It's got to become a national programme, like cactus control in the 1930s. We've got to go with an integrated management approach, which means looking at mechanical control and manpower, along with biological control using the podlet weevil, and in certain areas, herbicides," said Professor Martin Hill.

"We need to sit around a table and decide how to attack this, which areas we need to look at first, where are the priorities. The issue is that to deal properly with *Prosopis* would cost a farmer around R8 000 a hectare, yet he would not be able to sell it for that price, so it's really too expensive for individual farmers to control."

Fire Control and Job Creation

Apart from increased water flow and higher water tables, there are other benefits to controlling Mesquite. The wood itself, according to Martin, is beautiful.

There is also great potential for home construction.

"There's a company that we're working with in Knysna. They turn the Mesquite wood into a kind of slurry with other ingredients, and then pour into a mould, or between two walls."

A major added bonus is that it is heat-resistant.

"What they can do is put up very good metal blinds on the inside of the windows, held up by fishing gut. When a fire comes through, it melts the gut and the blind comes down, stopping oxygen. They've measured temperatures of 700 degrees outside, and 38 degrees inside."

"We've just started a relationship with the Association for People with Disabilities in Upington, where we are training people to rear podlet weevils for the biological control of *Prosopis*, and that's working really, really well, although it's quite an expensive project."

"We are aiming to pull together a big, multinational programme around *Prosopis*, and it's possible we can get international funding for that."

- Julianne du Toit

Novel biopesticide developed with partners now launched for commercial use

In an attempt to reduce the amount of chemical pesticides sprayed in the world, insect diseases, including fungi and viruses can be used as biopesticides. The advantages of these treatments are that they are effective and do not have the same non-target effects of conventional pesticides.

Over the last 20 years the Centre for Biological Control, along with its research partner, Citrus Research International, has been investigating entomopathogens for possible use, mainly in the citrus industry. In 2013, Tamryn Marsberg (Department of Zoology and Entomology) began rearing Litchi moth, *Cryptophlebia peltastica*, at Rhodes University for her PhD research where she discovered a novel baculovirus. By coincidence, in July 2014 our Polish collaborators, Boguslaw Szczewczyk and Lukasz Rabalski, were asked to assist us in identifying a separate novel virus that had been detected in false codling moth, *T. leucotreta*.

From 2015 to 2017, Michael Jukes (Department of Biochemistry and Microbiology) together with Tamryn and our Polish collaborators researched these novel viruses extensively, realising that in fact they were a single virus, the *Alphabaculovirus Cryptophlebia peltastica Nucleopolyhedrovirus* (CrpeNPV). Years of research into the identification and efficacy of this virus led us to realise that it had significant potential as a biopesticide

and we, with our research partner Citrus Research International (CRI) and our industry partner, River Bioscience (RB) sought to patent it.

The first draft of the CrpeNPV patent was prepared and signed in 2017, and since then the team worked on defending a challenge to the patent in Europe, through the correct channels, until January 2022. The European patent was successfully defended without amendments. This virus has now been commercialised by River Bioscience and the very first shipment of the patented CrpeNPV products, MultiMax and CodlMax, were shipped to farmers for use against agricultural pests in South Africa in August 2023.

Together with our industry partners, we are working with partners in Africa, North America and Europe to gain more registrations of the CrpeNPV to ensure that this virus has global significance as a tool for sustainable agriculture and resistance management to certain CpGV isolates. This story is a huge achievement for the Centre for Biological Control, along with its' partners, and we are very proud of our researchers, Tamryn Marsberg and Michael Jukes and the work they have done.

Source: CBC Staff

Dr Michael Jukes with the two patented products, MultiMax and CodlMax.



THE WORLD'S FORESTS in 2000



SARChI: Chair of Interdisciplinary Science
in Land and Natural Resource Use
for Sustainable Livelihoods

Distinguished Professor Charlie Shackleton
Department of Environmental Science

Humans in Nature

Distinguished Professor Charlie Shackleton, A1 Rated SARChI Chair of Interdisciplinary Science in Land and Natural Resource Use for Sustainable Livelihoods, focuses on what he terms “the intimate relationship between people, land and resources”. Exposure to Nature, he found, has an enormously positive influence on individuals and society as a whole.

Distinguished Professor Charlie Shackleton can barely remember a time in his life when he was not fascinated by the natural life around him. He and four siblings grew up in a small rural village near York, England, until he was 14. That’s when their father, a solicitor, decided to move his young family to the South African Lowveld, to try his hand at banana farming.

The effect of being in natural surroundings changed his father.

“Within eight months he gave up worrying about time and paperwork and what he wore. It didn’t matter, you know. It was a complete transformation. He loved being a farmer.”

At school in Nelspruit, Charlie Shackleton’s favourite subject was Biology, and when he’d matriculated, he opted for a BSc in Zoology at the University of the Witwatersrand.



Charlie took what he thought would be a filler course in Botany, but it soon became his passion.

“What a fantastic, absolutely phenomenal Department. You know, you hear about some Professors awakening things in people? Professor Brian Walker, who was as much an ecologist as a botanist, did that for me.”

After Honours in 1983, Shackleton had hoped to travel through Africa. There was a small problem though - a complete lack of money. He looked around for a job, and it came from an unexpected direction. A former Wits graduate, then Head of the Botany Department at the University of Transkei, needed a temporary lecturer. He'd come to his old Alma Mater, looking for likely candidates, and Professor Walker suggested Shackleton.

“I had never thought of academia as a career until then, but I accepted and really enjoyed lecturing the undergraduates there. My girlfriend Sheona, soon to be my wife, joined me a year later.”

A Rural Life

While at the University of Transkei (now Walter Sisulu University), Charlie opted to do his Masters, focusing on Mkambathi Game Reserve in Pondoland.

“It was way too big for a Masters and included mapping soils, mapping vegetation, estimation of carrying capacity, fire plans, browsing plans, stocking plans, even visitor surveys. It was absolutely crazy, in retrospect. We used to pack up on a Friday afternoon and drive three or four hours to the Reserve, work through the weekend until about four o'clock Sunday, and drive back to Mthatha so we could get back to lecturing on Monday.”

He and Sheona would later go on to do many research projects together.

“There are plenty of studies by Shackleton & Shackleton here,” said Charlie, indicating his heavily-loaded office bookshelves.

After five (5) years at the University of Transkei, Charlie and Sheona revisited their plans to travel abroad. Before they left in 1989, they saw an intriguing job, advertised at the University of the Witwatersrand's Rural Facility near Acornhoek in the Mpumalanga Lowveld, and sent in an application.

The Wits Rural Facility was established in 1989, specifically to create a multidisciplinary base where Wits could bring academic resources to bear on development challenges created by the apartheid homeland system, whilst exposing Wits students from a range of disciplines to experiential learning in such contexts.

Six months later, after a somewhat shortened trip overseas, the two Shackletons headed to Acornhoek. There they would spend several years working in various capacities, with occasional interruptions.

Fruit and Firewood

“After the democratic transition in 1994, I thought this is now time to join government and implement things that I had been

saying the previous government had been doing wrong in terms of land use, conservation, and so on. I went starry-eyed into provincial government as Deputy Director of Environmental Affairs heading up the Human Living Environment section and learnt, very quickly, that this was not the place for me.”

In early 1998 Charlie would join the CSIR, as the business area manager for the Ecosystems Management Group.

“I learnt a lot about project management and planning effectively.”

In the late 1990s, Charlie completed his PhD on the growth of savanna trees, supervised by renowned systems ecologist Professor Bob Scholes.

“I'm interested in the interface between humans and the natural environment, so I was more absorbed in how much fruit a tree could produce, or how much firewood, rather than only growth. I had 10 000 trees marked all over the country from the old Ciskei to the Zimbabwe border. Every year, I would go on a six-week trip to go and visit the trees, measure them or see whether they had died.”

Coming to Rhodes

By the late 1990s, the nascent discipline of Environmental Science was being conceptualised at Rhodes University.

As Professor Shackleton explains:

“A couple of people with foresight in the Botany Department (Dr Ted Avis) and the Geography Department (Professor Kate Rowntree) raised the point that there was something called Environmental Science that the University was not offering. It was a lot more integrated than either Department could handle, so they established what was called an Environmental Science programme. It wasn't a department, but with the help of a coordinator, students could then put together semesters and modules from other departments and emerge with a degree in Environmental Science.

“They appointed Professor Christo Fabricius as the lead on the project - a phenomenal visionary, a really great thinker. But within a year or so, he realised this was not going to work. The students needed at least one solid semester of Environmental Science, not just a mix and match across different departments. It was clear then that Christo needed someone else to help, and that was the advert I responded to.”

The programme grew slowly. At first it was sprawled awkwardly across Botany and Geography buildings, which triggered sparring over office space and resources. But by 2005, it had become the Department of Environmental Science. Now it occupies all three (3) storeys of a building flanked by tall trees and the green lawns of St Peter's campus.

Last Child in the Woods

Professor Charlie Shackleton's focus had long been the interplay between people and nature and the supply of natural resources that people needed, or, as he puts it, “that intimate relationship between people, land and resources. Can natural products be



Young and older children are drawn to the green open spaces of the township. Photo: Chris Marais.

used to alleviate poverty? When are they overused and what can you do about it?"

While in Indonesia on sabbatical, Charlie was given a copy of a book called *The Last Child in the Woods*, written by Richard Louv.

"Louv's central argument is that people need Nature, and with the rapid urbanisation the world is experiencing, this 'Nature-Deficit' is leading to a number of societal and individual dysfunctions - from obesity, attention deficit conditions and sleeplessness to depression. The book really absorbed me.

"When I returned, I did a very cursory skim of the library databases in South Africa to see who was working on urban sustainability issues, particularly the green issues, not the pollution issues. And there was zero.

"One of my Honours students, **Matt MacConnachie**, was very gifted when it came to Geographical Information Systems (GIS) - basically satellite imagery and remote sensing. He did a study looking at how much greenery there was in certain towns and cities.

"And it's slowly grown from there. I've increasingly gone into more urban studies. For a while I had a lot of research students working in rural areas and others working in urban areas. Never did the twain meet. But then I finally made the conceptual bridges and now I can get them to integrate."

A Cross-Cutting Chair

In 2012, Professor Charlie Shackleton applied for a SARCHI Chair with a long and unwieldy title: Interdisciplinary Science in Land and Natural Resource Use for Sustainable Livelihoods.

It was accepted, and Shackleton became committed to the most powerful word in the name of his Chair: 'Interdisciplinary'. It opened the doors to research into cross-cutting issues via different academic fields.

"We have students here from the social sciences, like Anthropology, Sociology and Economics, as well as the more traditional natural sciences. For example, we have done a study on informally employed gardeners - a totally unresearched sector. We found that there are about one million informal gardeners in South Africa, earning the minimum wage or below,

but nonetheless with a R10 billion to R13.5 billion annual wage bill. This is a workforce nearly triple that of the mining sector in terms of numbers.

"I trained as a plant ecologist, but the SARCHI Chair allows me to span ecology to the human well-being side. My foundational issue is poverty, in both urban and rural areas, but poverty is not solely income-based. You could have nutritional poverty, for example, or energy poverty, or powerlessness. So it's the various dimensions of poverty and how they are affected, positively or negatively, by access to plant resources.

"So if people have access to firewood, well, obviously that may or may not affect their energy poverty. If people have access to wild fruits, that may affect nutritional poverty. If people in a stressed urban environment have access to a park, or even a window looking out onto greenery, how does that affect them?"

"The main issue is the interaction of humans with Nature and the various elements of Nature and how that filters through to dimensions of poverty."

Green Apartheid

In the Global North, many studies had shown that a rich human experience correlates with greater exposure to Nature and

greenery. Studies even showed that crime drops in leafier surroundings.

No one had looked at South Africa, with its generally high crime statistics and racially skewed urban spatial development. Matt McConnell's GIS study proved that in nine (9) South African towns, the lowest income areas had the fewest trees and the least public green space, while more affluent suburbs, mostly inhabited by whites, had far more public green space per capita.

Professor Shackleton was a co-researcher on a 2022 national-scale, remote-sensing study, with **Zander Venter** and others. They took South African police data (publicly available per precinct) and correlated these crime statistics with access to urban green space and overall greenery.

The researchers found that: "after controlling for a number of socio-demographic confounders (unemployment, income, age, education, land use and population density), for every 1% increase in total green space there is a 1.2% (0.7 to 1.7%; 95% confidence interval) decrease in violent crime, and 1.3% (0.8 to 1.8%) decrease in property crime, with no effect on sexual crimes."

Spatial Planning

Why does urban greening differ along racial lines?

"It's a combination of factors. The national policy is quite positive. Or at least it has the correct recommendations: 400



Photo: Chris Marais.

square metres of park space per hectare, and the green space should be within a defined and walkable distance from people's homes. So, the national policy is fine.

"It comes down to municipal implementation. We had an Honours student, **Rebecca Read**, who did a survey of municipal planners. She found that the majority of them didn't know there was a national guideline to how much green space there should be. And if they don't know, how can they be planning for it?

There are also more complex issues confounding the subject, along with fundamental misunderstandings around budgets, says Professor Shackleton.

Park or Clinic?

"On the priority of needs, some people say a park is important. But if you are going to allocate R5 or R50 million, many might say they would rather have a clinic, or street lights, or for the roads to be fixed.

"This can sometimes lead to some real antagonism. Community members might not understand that Parks Departments and Health Departments have different budgets and priorities.

"And when a park is created instead of a clinic, for example, they can get angry.

"An interesting issue arose back in 2016, when there was a nationally-driven revitalisation programme to create or improve various urban parks in the Eastern Cape, in towns like Adelaide, Bedford, Kinton-on-Sea, Makhanda and others.

Many millions were spent on fencing, braai places, planting trees, setting up children's play equipment and information boards.

"They were very well done. But over the next few years, they fell apart. There were a number of reasons for it, but one of the most common ones was that the rejuvenated parks remained closed to the public until the mayor of the particular town formally opened it.

"And for whatever reason, the mayor never found time in his or her diary to see this as an important issue. So, before then, there had been open spaces that would have been fairly run-down, but still places people would use for recreation. These were now blocked off. They couldn't even go there to drink or smoke as they had before. People were told: don't go there, or wait for the mayor.

"Inevitably there was impatience, and fences were eventually cut for scrap or to allow cattle in. The upshot is that they are all trashed, every single one. You'd hardly recognise them as parks. Just about every tree has gone, there is cow dung all over, the play equipment is smashed and gone. Millions of Rands have gone to waste, as well as opportunities for kids to play in safe and pleasing surroundings."

Urban Foraging

In Europe and North America, many people are 'natural hunter-gatherers' in urban areas. They harvest hawthorn berries, for example. Or pick mushrooms in forests close to cities. According to Professor Shackleton, this is another subject that has received plenty of research attention in the Global North, but pitifully little down south.

"I've had two or three PhDs students working on the subject. They focus on people collecting fruits, medicinal plants, thatch grass, firewood and the like, in urban areas as opposed to rural areas. How can we support this so that species are not overused? How can municipalities meet these sorts of needs? Clearly in Canada or America or France it's not driven by poverty as it is here, so the offtake levels are lower, but it's really major and they're redesigning entire urban areas to provide these sorts of resources."

Theoretically, South African municipalities could plant hedges that provide indigenous fruits, like Num-Nums or Kei Apples. Traffic islands or pavements could be used to grow fruit trees, says Professor Shackleton. Of course, they would have to be safeguarded from wandering livestock, he adds.

"If you ask a municipal arborist about this, the first thing they'll say is 'Mess'. You don't want to park your car under a tree that's dropping ripe plums or whatever. My response is: people will collect the fruits because that's what you're planting them for. There are a few other minor issues, but they are solvable."

Spirituality and Urban Parks

"One of the latest issues I've been looking into is people's spiritual relationship with Nature. For example, on a Sunday, you'll see groups of people dressed in specific regalia and they are praying together in open-air, natural areas.

"How do municipalities accommodate that? Or don't they? **Professor Michelle Cocks** in the Anthropology Department has done quite a lot on sense of identity and African world views of Nature. In the Western world, Nature and humans are seen as quite separate. People come into Nature for picnics and recreation, while in an African world, your ancestors live in Nature, you need to access Nature to retain contact with them.

Are we designing parks in a way that allows African South Africans to meet their particular spiritual needs?

Urban planners and authorities could easily be more proactive around designing spaces for this sort of need, including for urban foraging. But they have a very western view that parks are for lawns, picnics, pushing prams and jogging.

"There's a lot more that urban parks are needed for."

- **Julienne du Toit**



SARChI: Chair in Biotechnology Innovation and Engagement

Professor Janice Limson
Rhodes University Biotechnology Innovation Centre



Science for the People

There is often a disconnect between science and the communities it can benefit. SARChI Chair in Biotechnology Innovation and Engagement **Professor Janice Limson** has made it part of her life's work to bring the two closer together.

Biotechnology is a scientific discipline that always seems to be utterly modern, on the cutting edge, a field of endeavour that can diagnose diseases with a strip of impregnated paper, or isolate bacteria that can render toxic waste benign.

It has proven to be critical in the fields of human health, food production, industry and pharmaceuticals.

Yet biotechnology is also one of the oldest sciences, one that sprang into being when humans began farming six thousand years ago. If humans had not mastered aspects of biotechnology - working with micro-organisms - there would have been no beer, wine, cheese, bread or yoghurt.

Today, biotechnology has thousands of potential uses. But most people have no idea of the possibilities. And very few scientists or academics actually consult with communities to find out what the challenges are, and how science and society can work together to create solutions.



Left to right: PhD student Ntobeko Songcata, Professor Janice Limson and Jialin Yu (Researcher) in the DSI Nano-Micro Manufacturing Facility for Paper Based Diagnostics facility at RUBIC.

Photo: Chris Marais.

Bridging this gap became a passion for Professor Janice Limson. And she feels that linking the two is a win-win for her students, for science and for society.

Melatonin and Heavy Metals

Born and raised in Gqeberha (Port Elizabeth), Janice joined Rhodes University in the 1990s for her undergraduate years, became fascinated by Chemistry, then became Professor Tebello Nyokong's very first graduated PhD candidate.

Her Doctoral studies centred on how melatonin, a natural messaging hormone in the body that controls sleep and wakefulness, may play a role in removing metals such as cadmium, lead and aluminium from the brain.

"This suggested that melatonin, which diminishes with age, has a role in detoxifying the brain of certain metals which may be associated with neurodegeneration."

The study opened up a new field of research into the role of melatonin in the human body. Professor Limson's research publications centred on melatonin have been cited more than a thousand times.

Lessons from San Antonio

Thanks to this very focused area of interest, Limson headed off in 1999 for a Postdoctoral Research Fellowship at the University of Texas Health Science Center at San Antonio.

"Their Cellular and Structural Biology Research Group had the best lab in the world for research on melatonin."

Janice remembers her years at San Antonio with great fondness.

"It was a very diverse cultural experience, being close to Mexico. I had a very positive experience there. The people were extremely kind and welcoming. Lifelong friendships were made."

Showcasing Science in Africa

While in the US, Janice saw how little was known about her home country.

"I don't think they realised that we were doing really great science in South Africa and I started thinking of a way to showcase it. I kept telling my journalism friends that they should start a magazine, and eventually one said: You start it!"

"So I did, after my Postdoctoral Research Fellowship ended. With the support of friends in science communication in the UK and in SA, I started the online magazine, *Science in Africa*."

"I taught myself how to design websites and put serious energy into the magazine. It was the first popular online science magazine on the continent and it cut across all disciplines. I was gratified to win the Highway Africa New Media Award in Journalism as well as a National Science and Technology Forum Award for my work in *Science in Africa*."



Highway Africa's Innovative Use of New Media in Africa Award, 2003. Photo: Chris Marais.

After her Postdoctoral Research Janice saw lecturing posts offered through the prestigious Andrew W. Mellon Foundation at Rhodes University. Supported by colleagues in Biotechnology, it seemed a natural step to begin an academic career at her Alma Mater.

Diagnostic Dipsticks

By 2003, Janice had established the BioSENS (sensors, energy and nanotechnology research group), which develops nanotechnology-based biosensors for biomarkers of disease, disease-causing pathogens and natural antioxidants in medicinal plants. Through a partnership with UNICEF in 2014, her research expanded to include studies on diagnostic tests for foetal and maternal health.

"Women should have multiple diagnostic tests during pregnancies to check foetal and maternal health. Those early indicators can be very valuable. Thanks to funding from UNICEF (United Nations Children's Fund), I established a laboratory with Dr Ronen Fogel, who was one of the first PhD students to graduate from my research group.

"We developed novel aptamers, which are molecules that can specifically detect biomarkers of disease. This in turn led to a focus on developing low-cost, accessible and robust paper-based diagnostics, similar to the Covid test strips or pregnancy dipsticks."

UNICEF has proven to be a highly valuable partner, according to Janice.

"The insights from UNICEF's Office of Innovation, based on their work in communities across the world, has helped shape our understanding of the local challenges that could potentially be addressed through science. This has been indispensable during our research in co-creating solutions for women across the world."

The BioSENS research collaboration with UNICEF on Next-Generation Biosensor Diagnostics, was recognised by FASTCOMPANY 2023 as an honoree of the "World Changing Ideas Awards" in the Developing World Technology category.

Intersection between People and Science

Janice has a passion for helping students gain real insight into the intersect between people and science.

"As part of their research, I encourage my students to engage with communities. So rather than just reading the literature to identify research problems, they speak to people, learn to understand what is needed. The whole concept is that they're then innovating for and with specific communities, including localised perspectives and community knowledge.

"I think that our students have really benefited from this approach. We have demonstrated that engaging communities can help shape the research. So if they understand that their product has to work under certain conditions, they might think differently about the design process and the research itself.

"The approach benefits students, it benefits our research, and we're doing research that will result in outputs that people need, want, and hopefully will use. We recently spoke on the topic of 'Lab to Life: Social Impact-Driven Biotechnology' at the Sydney SXSW conference in Australia with UNICEF's Tanya Accone (an old Rhodian), where this approach was extremely well received.

"People connected with the model of this kind of innovation focus, informed by local and international community engagement, and working with different stakeholders.

"One of my students recently commented that really engaging with communities made her identify better with who she was as an academic, so she could see herself as a scientist with agency. She told me it motivated her to develop products or processes or to make a difference through science."



Jialin Yu (left) and Ntobeko Songcata (right) preparing diagnostic tests for manufacture in the DSI Nano-Micro Manufacturing Facility.
Photo: Chris Marais.

Shaping the Chair

In 2013, there was a call for a SARCHI Chair in Science Communication, focused on the study of science engagement.

“Rhodes University’s Deputy Vice-Chancellor (Research) at the time, Dr Peter Clayton, encouraged me to apply, and to include what I would want to see in terms of effective engagement with communities, product and process development through biotechnology, and, of course, the teaching and the research components thereof.

“That year, there was only one Chair available initially, but the NRF ultimately awarded two (2) nationally, with one (1) of these awarded to Rhodes University focusing on Biotechnology Innovation and Engagement.”

Water and Citizen Science

One of Professor Limson’s PhD candidates is Thandiswa Nqowana, a Lecturer at the Rhodes University’s Community Engagement Division (RUCE). Her work on water testing perfectly illustrates the approach that Professor Limson has been encouraging.

“Thandie spoke with communities about what their concerns were, and what they needed, trying to identify useful interventions. Communities in Amakhala villages told her that they were very concerned about the water quality in their only sources of accessible water - boreholes or rainwater tanks.

“She has been working with communities on developing citizen science-based monitoring tools for water. And from this engagement, she has been innovating a new product which

can operate without electricity and can potentially give the community results in a shorter timeframe. We’ve done one iteration of product development, and it’s now going through another cycle.

Concern about water quality has become a major issue, and it is one that Professor Limson has acted quickly to address.

“As a direct result of Thandie’s work, we have set up the RUBIC (Rhodes University Biotechnology Innovation Centre) Community Water Testing Laboratory - a facility where people can have their water tested at low cost. We obtain samples from people’s homes directly to test, but we also work through the Public Service Accountability Monitor (PSAM) in Makhanda. PSAM has been a valuable partner through its Action for Accountability (A4A) working group, comprised of members from across Makhanda who assist us with monitoring and testing water.

“We were also able to engage the Makana Municipality to help them in identifying problem areas where *Escherichia coli* was present in the water. It was a lot of work for our team, but fortunately, we had funding through the Chair and the NRF Communities of Practice to be able to do this.

“We’ve just written a paper about this process, which shows how the testing service, informed by community needs and knowledge, is a form of responsive science engagement. It also demonstrates the value of science and the potential for long-term science-society engagement and co-creation of new products.”

The Cannabis Research Institute

There is another, little-publicised need in the Eastern Cape: a way of testing Tetrahydrocannabinol (THC) and Cannabidiol (CBD), two of the active compounds in cannabis grown in the remote areas of the Transkei and Pondoland.

For decades, cannabis has been grown illegally, but has remained a highly valuable and valued cash crop in an impoverished region. Now that some aspects of cannabis use have been legalised, and the active compounds in cannabis are being explored for medical usage, many opportunities have opened up for Eastern Cape growers. But they also face the risk of being sidelined, and having their livelihoods obliterated in part because the market has shifted to imported cannabis strains.

“Supported by the Chair funding and through grants from the Eastern Cape Office of the Premier, one of our PhD candidates has begun a process of engaging communities in Pondoland and beyond, to establish barriers to accessing the cannabis bioeconomy.

“Based on these initial engagements, and following on from the success of our water testing facility, we are working towards funding to set up a facility that can support growers through testing THC and CBD levels to start off with, and then expanding to other compounds as well.

“Scientists believe that landrace strains of cannabis (cultivated over several generations) might have certain phyto-cannabinoid profiles that could offer certain medical benefits. Providing communities with access to this information through a testing facility and supported by research at institutions nationally may help create the demand for the novel cultivars traditionally grown.”

However, the challenge for supporting the bioeconomy will need to engage multiple stakeholders, Janice believes. RUBIC has begun hosting critical discussions and workshops to explore pathways to impact for communities in the region around cannabis.

A Leapfrog Forward

Science makes a promise, but as Professor Janice Limson has found, delivering on that promise is not always easy when it comes to technology transfer and innovation.

“The product innovation cycle can be long, with lengthy time-frames between engaging communities and societally relevant technology. While the water testing laboratory helps to serve as a bridge by providing access to testing and results, for example, we also need to develop accessible technology.



Research at RUBIC will take a transdisciplinary approach in establishing an institute for cannabis research.
Photo: Chris Marais.

“There is a gap between applied research, trouble-shooting and manufacturing prototypes that could be sent to an independent laboratory for validation. This has been a stumbling block for technology transfer and innovation.

“However, we’ve recently been awarded a Department of Science and Innovation grant to establish a Nano-Micro Manufacturing facility (NMMF) at Rhodes University. As one of five such facilities nationally, the one at RUBIC will be focused on paper-based diagnostic tests.

“The NMMF positions us and researchers in the area in South Africa to manufacture large batches of paper-based diagnostics using state of the art facilities that can leapfrog research from the lab to life-saving technology. We expect that this will result in new spin-out companies headed by emerging graduates.”

Science Communication

Janice Limson’s highly respected online publication, *Science in Africa*, ran for 15 years until 2014. Thanks to the SARCHI Chair, the focus on Science Communication morphed into other forms.

“I collaborate with the School of Journalism and Media Studies (JMS), and we have just completed a large project exploring the potential role of journalists in mediating engagement between

communities and scientists. This particular project focused on sugarcane growers and a new Genetically Modified (GM) sugarcane being developed at the South African Sugarcane Research Institute (SASRI). I have been co-supervising two (2) journalism students with Dr Alette Schoon of the JMS, both of whom will complete the degree this year.

I've always wanted to explore whether we can involve journalists in mediating discussions between scientists and communities. In what way could we utilise their skills, especially in navigating potentially contentious areas of research?

"The study was aimed at exploring the development of appropriate materials to communicate the science while exploring the role of journalists in mediating communication through a short documentary video.

"Our approach was firstly to listen. The community reflected on the issues that they experienced via the journalists, while scientists communicated the technology behind the new sugarcane. A detailed survey explored local community understanding and perspectives around biotechnology. This helped the journalists respond and develop accessible materials through several feedback loops.

"Engaging journalists to mediate discussions was eye-opening for us, and for the students. We did not expect that the challenges experienced extended beyond the conventional debates surrounding GMO use. The growers highlighted that the rollout of GMOs was of lower concern than the lack of available land for sugarcane production.

"This changed the narrative, and highlighted challenges for land usage for refugia. Mediated by journalists, scientists and communities were able to identify challenges and begin exploring how best to address these."

Partnerships and Pathways

"When I led the establishment of the Rhodes University Biotechnology Innovation Centre ten years ago, the vision that I had was for it to meaningfully engage with other disciplines, not just within the science space. Creating products and processes with societal benefit and impact is not just a scientific challenge. It involves different stakeholders, a range of different skills and different schools of thought. We have successfully embedded entrepreneurship training, science communication and community engagement into our Postgraduate teaching and research programmes.

"There remains great potential in reconceptualising how biotechnology and science in general should be taught in higher education."

"Our collaborations with the Rhodes Business School, the Community Engagement Centre and the Journalism and Media



Lwazikazi Madikiza, Science Engagement Manager testing water in the Community Water Testing Facility.
Photo: Chris Marais.

Studies School at Rhodes, unlocked new opportunities for learning for our collaborating students. Bringing on new stakeholders and partners, such as PSAM, Makana Municipality and the approaches from the humanities helped shape impactful outcomes such as our water testing facility. Partnerships with communities are opening pathways to truly co-creating new technologies.

"I believe that expanding on this mindset by embedding this transdisciplinary approach in teaching, research and innovation in higher education through innovative new programmes holds the potential for truly transformative learning experiences for students, research outcomes and societal impact.

"This approach will also enable the training of a cohort of students with the wider skillset needed to address local and global challenges."

Professor Limson is now looking to the future.

As she sees it, her work has not just sought to redefine biotechnology in higher education, it has demonstrated the value of engaged research in science at universities, advancing scholarly practice and outcomes in the field locally and internationally.

Supported by a committed team of researchers, and with her teaching, science engagement and innovation foci well-aligned, Professor Limson feels her work is poised to deliver impactful societal solutions through technology innovation and policy interventions, while drawing on a wide stakeholder base to enable the inclusivity of communities in the bioeconomy in a sustainable manner.

- Julienne du Toit



NRF SARCHI Chair Intellectualisation of African Languages, Multilingualism and Education

Professor Dion Nkomo
School of Languages and Literatures

Intellectualising African Languages

The mission and milestones of language inclusivity
in the field of South African Higher Education.

Professor Dion Nkomo is the Chair of the NRF SARCHI: Intellectualisation of African Languages, Multilingualism and Education at the School of Languages and Literatures at Rhodes University.

The ongoing task of this Chair and its collaborators is to help to systematically bring the indigenous languages of Africa out of the linguistic shadows, one glossary at a time, one dictionary at a time, one conference at a time, and one translation at a time.

The English Language

“English is still seen as a language of upward mobility,” said Professor Nkomo. “And even if you give people the freedom to conduct their lives in their own language, they will feel English proficiency gives them more opportunities. Even if people are uncomfortable with English, they will still invest in acquiring it.”

“The Language in Education Policy promotes parity of language esteem, and it says learners have the right to



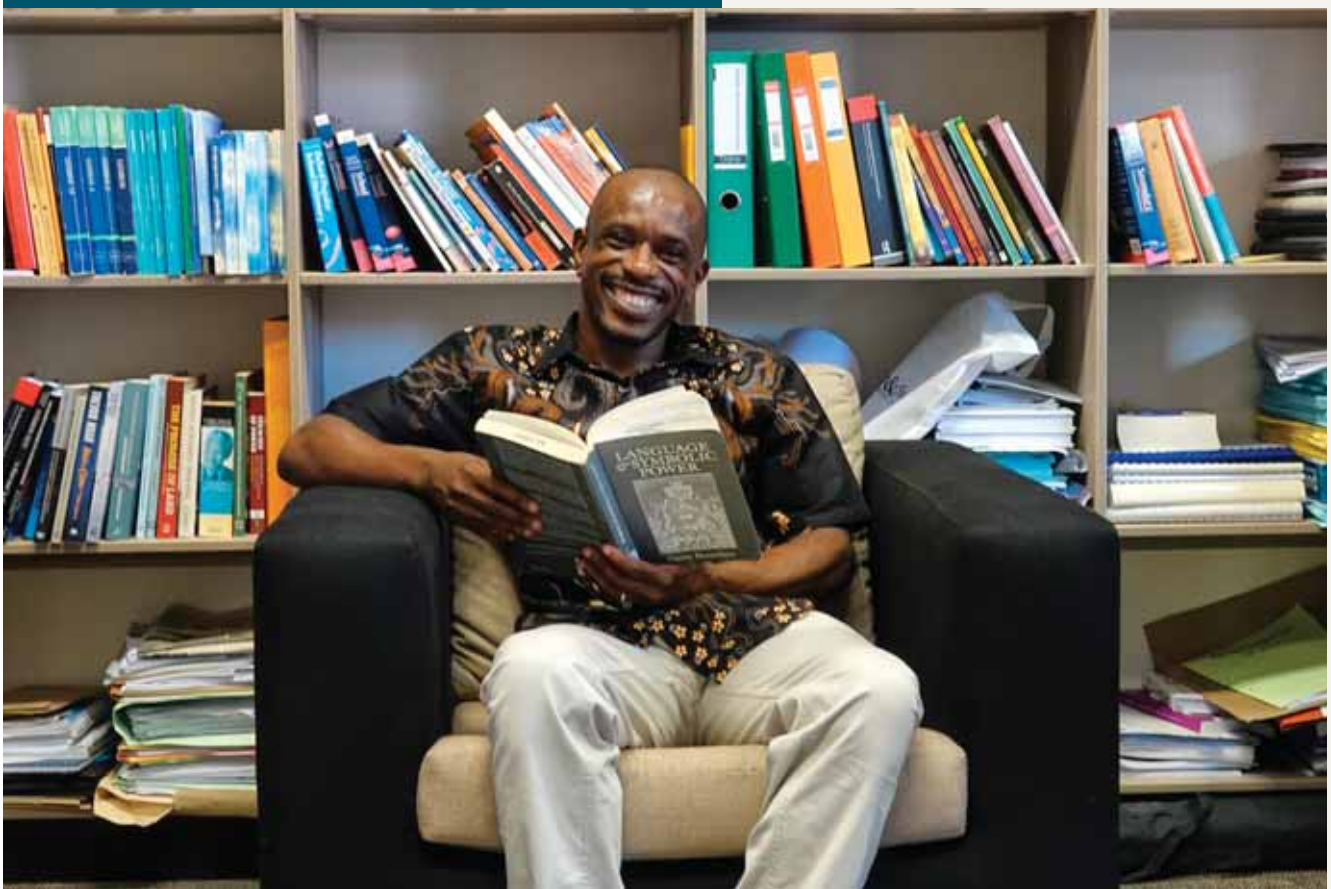


Photo: Chris Marais.

choose the language in which they want to be educated. But, at the end, people will choose the language they feel will empower them. This, despite the fact that no more than 10 percent of our population has English as its mother tongue - where is the democracy in that?

"Another point is that, in South Africa, many of the indigenous languages have not been sufficiently cultivated at the basic level of education. For instance, there is a huge diversity of English language dictionaries available, for any discipline you can think of. But, for example, I can count the variety of isiXhosa dictionaries on the fingers of one hand."

Professor Nkomo said that the early African dictionaries were mostly produced as a result of missionary encounters with speakers of indigenous languages.

"They realised it was no use preaching in English on Sundays and have their congregation not be able to read the Scriptures," he said. "So it became important for them to develop material in African languages so that they could read the Bible in their own time. Grammar books and dictionaries were produced, ostensibly for use by the African congregations, but really because the missionaries wanted to also learn the African languages for communication purposes. The problem was that

a number of these dictionaries were not informed by sufficient research on the language in question, in terms of its structures.

"There were also cultural and religious prejudices that emerged in these dictionaries. So that those coming onto the continent and learning African languages this way would basically be seeing Africa through the prejudice of the missionaries' viewpoints."

Tyranny of Language

Dion Nkomo's first awareness of the awesome power of language is, however, rooted in his home country of Zimbabwe.

He was born and raised in a little Matabeleland village in Nkayi, about 150km from Bulawayo. As a five-year-old boy in 1985, he had first-hand experience of the brutality of the Gukuruhundi (Shona for "the early rain which washes away the chaff before the spring rains") campaign of terror waged by the late President Robert Mugabe's North Korean-trained Fifth Brigade (Shona-speaking soldiers belonging to the ruling ZANU-PF Party) on the Ndebele-speaking population of Zimbabwe.

"I was with my grandmother in Nkayi when they arrived to interrogate her," he said. "The 'soldiers' were irate when she answered in Ndebele and tried to explain that she didn't understand them when they asked questions in Shona. She was so badly assaulted that she lost her hearing and walked with a permanent limp afterwards."

It was, however, when he first attended the University of Zimbabwe in Harare that Dion became fully aware of the rift between Ndebele and Shona.

"I had Shona friends and teachers back in high school in Bulawayo," he said. "But it was only in Harare that I realised the differences, and what they meant. Shona friends you knew at school no longer spoke Ndebele to you, or socialised with you, the way they had before."

And looking back on the after-effects of the 1980s ethnic cleansing campaign in Zimbabwe, when an estimated 20 000 Ndebele-speakers were killed, Dion Nkomo spoke of "linguistic genocide" in a chapter he contributed to a book called *The Linguistic Dimensions of Gukurahundi*.

"An analysis of the linguistic dimensions of Gukurahundi in Zimbabwe facilitates an understanding of the nature of violence that was deployed as a nation-building mechanism in Zimbabwe along tribal lines," he wrote.

"While the physical violence of Gukurahundi might have ended, part of its enduring legacy manifests itself through the imposition of Shona as Zimbabwe's *de facto* official language and the unmarked symbol of 'Zimbabweanness'."

During the time of Gukurahundi, the Shona language was weaponised by the ruling party soldiers. Dion Nkomo quotes the words of a survivor:

"When the soldiers spoke to the Matabele, they spoke in Shona. Then if you don't understand Shona, or you don't answer in Shona, that's when you are a target. If you ever knew Shona, you are safe that way. If ever you can speak Shona, you are safe, you are always safe."

His chapter conclusion states:

"The presentation of the Shona language within the Zimbabwean state, state-aligned institutions and Zimbabwean society at large reflects the cultural and political antagonisms dating back to the pre-independence era. It is, in fact, a subtle form of violence which undermines everything that is different."

Zimbabwe today has sixteen (16) different officially recognised languages, said Professor Nkomo, but until 2005 only Shona, English and Ndebele were taught in the country's schools.

"English still remains the language of commerce, employment, legal record and academic achievement in Zimbabwe," he said. "With notable exceptions, mainstream language planning scholarship regards English as the medium of oppression and a killer language as far as indigenous languages are concerned."

Dion Nkomo's Academic Journey

After high school, Dion Nkomo signed on for a Bachelor of Arts degree at the University of Zimbabwe, focusing on English Literature, IsiNdebele and Theatre Arts. After a stint of school-teaching, he returned to the University of Zimbabwe as a research assistant at the African Languages Research Institute where he produced a dictionary of music terms, *Isichazamazwi Sezomculo*.

He later obtained his MPhil and PhD in Lexicography at Stellenbosch University and then we went on to Rhodes University for a Postgraduate Diploma in Higher Education. He became the SARChI: Intellectualisation of African Languages, Multilingualism and Education at the School of Languages and Literatures Chair in 2022. His predecessor was Russell H Kaschula, former Professor of African Language Studies at Rhodes University.

At his inaugural lecture in 2022, Professor Nkomo emphasised the need to acknowledge and respect linguistic diversity, using his Zimbabwe background and experience as an example. He spoke of the "linguistic prejudice" that existed, with Shona still topping the African language pile in that country.

With regard to South Africa, he said that despite the existence of democratic language policies and structures, there were persistent challenges in intellectualising African languages.

"First additional language English means that you are expected to perform academically in the other subjects using English. For a first additional language in isiXhosa, it is enough to be able to say "molo".

"At universities, we get students who come with distinctions in isiXhosa yet they cannot write in isiXhosa, but that would not be expected in English. That, for me, is another form of linguistic prejudice whereby despite the policies saying that languages should be treated equally, clearly in terms of resources, African languages are not adequately provided for.

"The issue is that an excellent language policy was adopted, and relevant structures were established, but we still continue to revise the policies without implementing them."

Objectives and Sample Projects

The NRF SARChI Chair: Intellectualisation of African Languages, Multilingualism and Education has, as its stated broad aims, the "development of indigenous African languages in a manner where they can be used to facilitate and support meaningful learning in South African higher education. At the same time, it aims to develop curricula for the teaching and learning of indigenous African languages as additional languages, particularly in professional disciplines.

The Chair sees the "development of terminology, academic texts and resources in isiXhosa in specialised professional and academic disciplines" as one of the ways to achieve this.

"There have already been some exciting developments in this regard, in departments like Politics and International Studies," said Professor Nkomo. "We have developed glossaries to ensure that students can be able to understand and unpack concepts related to politics and international studies, in their mother tongues."

Other departments at Rhodes University, such as the School of Journalism and Media Studies, have introduced a compulsory isiXhosa language course. The department states:

“The purpose of this course is to enable students to work confidently and sensitively as journalists in multilingual and multicultural environments. It focuses on what it means to work as a journalist in the environment in which Rhodes University is based. Because isiXhosa is the primary language of communication for the majority of people in this context, the course aims to strengthen students’ ability to communicate in this language.”

Professor Nkomo added:

“This speaks to the aims of the Language Policy Framework for Higher Education, which seeks to create a more enabling environment for the promotion of multilingualism - and indigenous African languages in particular.”

The National Research Foundation (NRF) describes it thus:

“At Rhodes University, the Chair provides a collaborative fulcrum for interdisciplinary research and initiatives that are implementing multilingual interventions to address epistemic challenges imposed by the predominantly English monolingual academic culture.

“It works with academics in research-based design of multilingual tutorial interventions and assessments. Such collaborations affirm the potency of African languages that needs to be harnessed not only to make our higher education linguistically diverse, but also to legitimise ways of knowing that are beyond the monolingual academic culture.

“Collaborative conference presentations and publications from such interdisciplinary work demonstrate the integral role of language in the knowledge production enterprise.

“The Chair is at the forefront of asserting multilingualism and the legitimacy of African languages as integral elements of the institutional culture as provided for in the national legislative framework, particularly the Language Policy Framework for Public Institutions of Higher Education (2020).”

The Chair utilises the contributions of Masters and Doctoral students who research a diversity of language and literary subjects, all with a strong focus on African languages. Many of the Postdoctoral contributors come from other parts of Africa, like Nigeria, Tanzania, Uganda, Kenya, Ghana and Zimbabwe. At the end of their programmes, a number of them are retained by the Chair as Research Associates.

“All of this has increased the Chair’s scholarly influence on the continent,” states the NRF.

The Challenges

Professor Dion Nkomo said the biggest challenge the Chair faced was the belief, among some, that bringing African languages into the realm of academia was impossible.

“Any translation, glossary or dictionary can be precise, but it takes a lot of effort and investment. We’re trying to help isiXhosa and other African languages catch up after nearly two centuries of neglect within this space.

“In the 16th Century, the English language was not where it is today. But with the emergence of nation states in Europe, there was a feeling that to be a nation, you needed your own language, a rallying point. That’s when you began to see the emergence of the various language academics.

“In England, there was a desire to develop a national language that served as an identity marker. And so they borrowed words, from languages like Latin and French. And it’s fine if we have to do that to develop isiXhosa for academia.

“I want us to be in a situation where we are proficient in English, but we also know we can use other languages in the same way. It would be a multi-lingual situation where the choice to use a language is not only determined by the prestige of that language.”

Decolonising the Mind

The Chair is also managing the publication of Sesotho, isiXhosa, isiZulu, isiNdebele and Kiswahili translations of Ngugi wa Thiong’o’s *Decolonising the Mind: The Politics of Language in African Culture*.

Kenyan writer Ngugi wa Thiong’o is known internationally as an icon of Afrocentric radicalism who penned, among many other books, the famous polemic *Decolonising the Mind*. It was an attack on cultural colonialism, in the form of a collection of essays about language and its constructive role in national culture, history and identity. It is a mix of autobiography, post-colonial theory, pedagogy, African history and literary criticism.

The author describes his work (published in 1986) as “a summary of some of the issues in which I have been passionately involved for the last twenty years of my practice in fiction, theatre, criticism, and in teaching of literature.”

He dedicated *Decolonising the Mind* to “all those who write in African languages, and to all those who over the years have maintained the dignity of the literature, culture, philosophy, and other treasures carried by African languages.”

And yet, said Professor Nkomo, the ground-breaking book was first published in English, one of the languages of African colonisation. In 2021, his Chair then took on the immense task of co-ordinating the translation of *Decolonising the Mind*, into five different African languages.

“Some time ago, Ngugi told us he considered our translation project of *Decolonising the Mind* to be a form of repatriation of knowledge,” said Professor Nkomo. “He said we were actually addressing a case of intellectual theft”.

- Chris Marais



SARCHI Chair of Geopolitics and the Arts of Africa

Professor Ruth Simbao
Department of Fine Art

Grounding the Arts of Africa

Creating an infinite hub of home-based knowledge that repositions African art through a 'southern' lens.

The Rhodes University SARCHI Chair of Geopolitics and the Arts of Africa has been steered by **Professor Ruth Simbao** since 2016. In 2018, the programme launched its new research space, including the RAW Spot Gallery.

The work-passion Professor Simbao shares with her team of Research Associates, Postdoctoral Fellows and students, is to weave together the often-ignored stories of the arts of Africa in ways that challenge limited perspectives about the African continent.

Whether it is performance art, painting, exhibitions, book and article publishing, film production, or some form of arts conference, her Chair has organised, directed, curated and participated in numerous productions and events over the past eight (8) years.

"Recently there have been exciting shifts away from the north's problematic framing of 'African art' towards a new rise of art historians and practitioners on the African continent. Based in Africa and collaborating with others on the continent and in the 'global south', we view our leadership within



these shifts as core to our contribution to the contemporary art world and the global academy” says Professor Simbao.

One has but to scan through her list of research interests to realise the span of Professor Simbao’s work:

“Art with a particular focus on Africa; the geopolitics of art, knowledge and society; ‘strategic southernness’ and ‘global souths’; theories of place, contra-flow diasporas, and cosmo-localism; the power of small spaces, modest gestures, faux pas and failures; artists’ engagements with migration and xenophobia; Africa-China and the arts; cultural festivals and globalisation; performance theory and site-situational art; ‘reaching sideways’ as a form of decoloniality; and spiritually embodied methodologies”.

The African Arts Journal

In 2016, Rhodes University was invited to join the African Arts editorial consortium, and Simbao ran the first Africa-based editorial board of this *MIT Press journal*. Her core goal was to significantly increase the number of Africa-based authors as a way of shifting the centre of gravity in this area of scholarship. To achieve this aim, she ran publication workshops in collaboration with Makerere University, the University of Lagos and Kwame Nkrumah University of Science and Technology.

“While our research continues to engage with the north, it employs what I call ‘strategic southernness’ as a way of writing new art histories. These audacious art histories draw from spaces that share histories of colonialism and contemporary narratives of neo-colonialism, forced migration and racism. ‘Strategic southernness’ resists northern framings of these narratives, and it does so without flattening the idea of multiple souths.

“Africa is a place of significant insight and cutting-edge ideas. The ‘global north’ has a lot to learn, as the ‘global south’ is leading contemporary scholarly shifts”.

Engaging with these shifts, Simbao collaborated with Verónica Tello, Dylan Miner, Zoe Butt, Edgard Alejandro Hernández, Rolando López, Carla Macchiavello, Walter Mignolo, and Rachel O’Reilly to produce the book, *Future Souths: Dialogues on Art, Place and History* (Third Text Publications, 2023).

A Meandering Path

“I went to a public school in Cape Town during the apartheid era,” Ruth Simbao said. “But both my History teacher and my Art teacher stood out as radical. They didn’t teach from the government-approved textbooks, but thought out of the box. This is why Art and History inspired me the most.”

“Studying Fine Art in South Africa in the late 1980s, we were not encouraged to become academics or curators”. Simbao took a “meandering career pathway”, before she found her

way back to Art History and curating. She earned a Master’s degree in Worldview Studies and an MPhil in Canada. Doing courses in Cultural Studies, Film Theory, Philosophy, Feminist Studies and Liberation Theology, she developed “a broad base to work from, academically and personally.”

It was in Canada that Simbao learned the importance of women scholars mentoring younger women. An art historian mentor-friend invited Ruth to the College Art Association conference in Boston in the late 1990s. This opened the door of Art History.

After a curatorial internship at the Art Gallery of Ontario and a Research Fellowship at the National Gallery of Canada, Ruth returned to the USA and, in 2008, was awarded her PhD from Harvard University’s History of Art and Architecture Department.

“In many ways, that whole North American experience was a culture shock for me,” Professor Simbao said. Certain Harvard Professors she encountered were Eurocentric in their thinking, but she found a home in African and African-American Studies, African History and Swahili, and took classes in Senegalese dancing and drumming.

Zambian Research

In the early 2000s, Professor Simbao travelled all over Zambia for two years, following the annual calendar of cultural festivals. With a focus on performance and the notion of “escorting tradition”, she was more interested in performative slippages and unofficial moments than the official stories of cultural gatekeepers.

“I was not only looking at what happened on festival stages, but also what happened behind the scenes, particularly with women”. Simbao spent a lot of time in Mwansabombwe Village and Nkomeshya Village, where she became acquainted with one of Zambia’s most powerful rainmakers, Senior Chieftainess Nkomeshya Mukamambo II, who was a member of Kenneth Kaunda’s first cabinet in the 1960s.

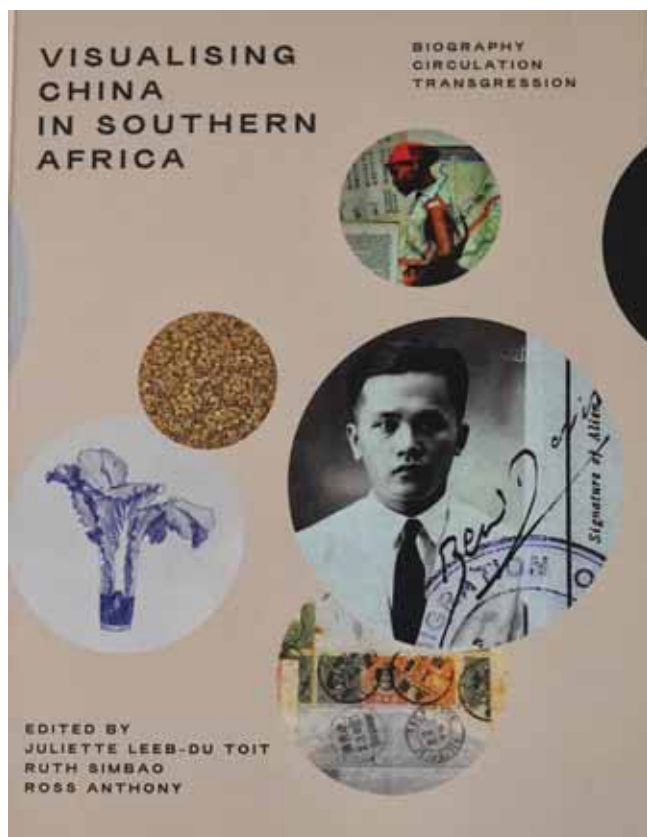
Chinese Presence in Zambia

About twenty years later, Professor Simbao found herself back on Chieftainess Nkomeshya’s land. In 2019, her academic focus was on the growing presence of China in Zambia. She closely followed the establishment of the TAZARA memorial that was built in Nkomeshya’s chiefdom near to Lusaka.

“While they were building the TAZARA railway line in the 1960s, a number of Chinese workers died. There was a dedicated graveyard in Mpika for the Chinese workers, but the Zambians who died were buried near their respective homes.”

Chinese graves in Zambia were exhumed and relocated to the new heritage site. The memorial was officially opened in 2022, and is now run by the Chinese Embassy.

In a 2022 presentation, *Re-burying the Remains of Chinese Martyrs: The Rumours, Controversies and Revised Solidarities of the New TAZARA Memorial Park in Zambia*, Professor Simbao questioned the official rhetoric of the site.



Visualising China in Southern Africa: Biography, Circulation, Transgression, edited by Ruth Simbao. Photo: Chris Marais.

"Residents in nearby villages and in the town of Chongwe heard rumours about the construction of a 'large Chinese graveyard', resulting in various concerns about the use of the land and processes of memorialisation."

In a keynote address at Birmingham City University in 2022, Simbao challenged the way China uses the new memorial and the Zambia-China history of solidarity as a form of "China branding".

In her feature-length documentary film, *Tulelosha (We are mourning)*, she examines the untold stories of the TAZARA memorial. The film engages with Chieftainess Nkomeshya's traditional ownership of this land; Zambian perspectives of ancestral spirits in relation to their land; the spiritual complexities of exhuming graves; and the insufficient naming and honouring of Zambian comrades.

Visualising China in Southern Africa

Professor Simbao's growing interest in Africa's relationship with China also gave rise to the publication of a major book titled, *Visualising China in Southern Africa: Biography, Circulation, Transgression*. Published by Wits University Press (2022), it is co-edited with Juliette Leeb-du Toit and Ross Anthony.

Professor Yoon Jung Park, Director of the Chinese in Africa/Africans in China Research Network writes:

"This is perhaps the most important contribution to the growing body of China-Africa literature of the decade. The authors turn

their attention to the visual, artistic, and cultural aspects of Africa-China contact and engagements, touching on the geopolitical and the personal, the colonial and contemporary. Individually, the chapters challenge existing discourses and narratives, and offer up new ways of seeing relations and impacts through art, artists and artefacts, highlighting insightful complexities, tensions, fractures and anxieties. Taken together, it is breathtaking in its ambition and scope".

Jamie Monson, Professor of History at Michigan State University adds:

"This pathbreaking publication draws together, for the first time, works by authors who analyse the encounter between Chinese and Africans through the lens of visual arts and material culture. Led by the leading scholars of artistic representation in China-Africa engagement, the contributors make visible the circulations and connections between material objects, identity and culture in the expanding relationship between Chinese and Africans".

Expanding this research, Professor Simbao is currently working on a monograph about African artists' responses to Chinese presence in Africa more broadly. Recognised as an expert in this field, she was recently invited to join the editorial board of a new Afro-Asia book series at Pittsburgh University Press.

Back to the Zambian Copperbelt

Professor Simbao participated in writing a proposal for Rhodes University's inclusion in the recently-established Africa Multiple Cluster of Excellence. In 2020, she became the PI of the cluster's research project on art and activism, which took her back to Zambia, this time to the Copperbelt.

Collaborating with artist and former MFA student, **Stary Mwaba**, she ran an artists' workshop in Kitwe in 2021. Together they grappled with local resistances and counter-resistances in the informal mining sector.

In 2022, Simbao and Mwaba curated the exhibition experience, *Ifipe fya Bana*, within the "living archives" of David Chirumbo's homestead in Kitwe. This approach of community-based curating that circumvents museums and challenges typical curatorial structures, reflects Simbao's ideas of "curating sideways".

In June 2022, Professor Simbao was invited to participate in the Harvard University Symposium, *The Future of Curating in Africa*. While conversations at the symposium kept returning to museum structures typical of the West, Simbao presented the paper, "In Spite of Museums: The Unpredictable Delight of 'Taking Care' Otherwise".

In this presentation, she expressed her interest in "moments that cannot and in fact should not be controlled - the slippages, the trickster moments, the surprises, the failures. In short, the unpredictable delight of 'taking care' otherwise".

"The future of curating in Africa" says Simbao, "is not about big museums or famous institutions. It's about grounded stories, and the exciting things that young practitioners are doing in atypical spaces".

Audacious Art Histories

The notion of “grounding” is critical to Professor Simbao’s research. On the one hand, this relates to a grounded approach that flies in the face of elitist artworld structures. On the other hand, it refers to human beings’ engagement with land, including our relationship vis-à-vis land to our ancestral spirits.

Expanding on this, Simbao worked with collaborators for the past few years to create the book, *Audacious Art Histories: Grounding the Arts of Africa*. Currently in press with Jacana Media, the book is co-edited with **Stephen Fõlárànmí** and **Rachel Baasch**.

Many of these chapters engage with methodologies that are profoundly grounded and embodied. Such methodologies move away from and challenge detached ways of knowing, and embrace forms of co-creation, not only with other human beings, but also with our physical and spiritual environments.



Photo: Chris Marais.

St Helena Island

Simbao’s most recent research is situated on St Helena Island in the South Atlantic Ocean. She began this research through the Rhodes African Studies Centre (RASC) as part of the Africa Multiple Cluster of Excellence. Various collaborators in the cluster are working on heritage, memory and the history of slavery at the intersection of Indian and Atlantic Ocean socio-political currents.

St Helena is a remote island between Namibia and Brazil. It was a stopover for British East India Company (EIC) ships on their way to and from the Indian Ocean. Simbao’s fifth and fourth great-grandmothers worked in domestic labour for the EIC. She has traced their lineage in the island archives, which hold valuable documents from the 17th century.

Engaging with spiritually embodied methodologies, Professor Simbao is creating an experimental, speculative film that examines the imperial history of the island from the time of her ancestors. She challenges the way women’s histories, in particular, are easily lost in patriarchal notions of family lineage.

The island became well-known as a prison island. In 1810, Chinese indentured labourers were sent there, and later in the 19th century Dinuzulu KaCetshwayo and other Zulu chiefs were imprisoned there. Contemporary inhabitants have complex ancestry that reflects St Helena’s history of slavery, indentured labour and imprisonment.

This recent research on St Helena Island comes full circle, connecting to Simbao’s ongoing interest in African and Chinese histories, solidarities and resistances.

- Chris Marais



SARChI Research Chair: Critical Studies of Sexualities and Reproduction (CSSR)

Distinguished Professor Catriona Macleod
Department of Psychology



Social norms regarding sex, sexualities and reproduction

The SARChI Chair: Critical Studies of Sexualities and Reproduction (CSSR) programme, ongoing since 2014, is using detailed research analysis to examine many commonly-held beliefs about sexualities and reproduction, and inform government on the real issues involved.

Despite enabling legislation and policies, South Africa is beset with a range of sexual and reproductive health problems: queer people continue to face discrimination; almost half of abortions are performed illegally; sexual and gender-based violence remains high; sexuality education is often taught in moralising ways; alcohol use during pregnancy persists; health and social services are often not youth friendly; contraceptive coercion and obstetric violence are still features of healthcare; and so the list goes on.

Decades-long academic research has shown how structural and health inequities, as well as social norms that perpetuate racialised hetero-patriarchal power relations underpin these problems. These are the issues that drive the research conducted by **Distinguished Professor Catriona Macleod** and the Critical Studies in Sexualities and Reproduction research unit.

Professor Catriona Macleod

Distinguished Professor Catriona Macleod, is a B1-rated social scientist specialising in sexualities and reproduction and feminist theory in Psychology.

Her Doctoral thesis, completed in 1999, was titled *The governmentality of teenage pregnancy: Scientific literature and professional practice in South Africa*. Her study critically analysed the technologies of scientific representation and the technologies of intervention regarding teenage pregnancy in South Africa. Rather than posing the common questions - what the causes and consequences of teenage pregnancy are - Professor Macleod asked how young women who become pregnant are positioned within research and healthcare interventions, and what are the implications are in terms of discourses in relation to health equity.

Following on from this work, Professor Macleod published the multi-award winning book *Adolescence, Pregnancy, and Abortion: Constructing a Threat of Degeneration* (2011; Routledge). In it, she argued that the continued negativity regarding early reproduction is steeped in (neo)colonialist understandings of “adolescence” as a stage of transition that is already imbued with a threat of degeneration (personally and socially).

Brief background

Catriona Macleod went to High School in Richards Bay in the late 1970s, in what was then a conservative, authoritarian world.

“At school there was just no diversity of thought or opinion,” she says. “I remember once being hauled into the principal’s office for disagreeing with my English teacher on the interpretation of a passage in *Lord of the Flies*.”

After school, Catriona signed on for a BSc at the Pietermaritzburg campus of the University of Natal (now the University of KwaZulu -Natal) and majored in Psychology and Mathematics.

“I’m very pleased I studied maths, because with it I learnt how to think logically,” she said. “Then I went on to do my Higher Diploma in Education (HDE) at the University of Cape Town and taught at various schools for four (4) years. But during that time I was living like a student and saving as much money as I could to go back to university to do my Honours in Psychology and Masters in Educational Psychology.”

Rural Work

After she had completed her Masters in Educational Psychology in the mid-1990s, Catriona Macleod and her husband Dr John Reynolds joined the University of the Witwatersrand’s Rural Facility in Limpopo.

“I was working on two projects,” she says. “One was a community mental health study, a needs assessment around psychiatric outpatients who had been to Tintswalo Hospital in

the Acornhoek district but were now living back in their various home-villages. The other project was looking at inclusive education aspects like Guidance, now called Life Orientation.

“So I was engaging with a lot of teachers and nurses on those projects, and I noticed that the subject of teenage pregnancy would come up a lot. I became really interested in how people were discussing it, how they chose to present it in their narratives.

“So that’s how I came to do my PhD on teenage pregnancy while working at the University of Zululand - my post after the Wits Rural Facility. Before, I hadn’t been specifically working on sexuality issues, but I could see it was a critical topic. My focus was on how pregnant young people were being represented in the scientific literature. I looked at the power relations behind the understandings and interventions with young people who are pregnant.”

The Work Spreads

After completing her PhD, Catriona Macleod joined Rhodes University at its East London satellite campus.

“I wrote a lot of articles around the subject of teenage pregnancy, and then was funded by the National Research Foundation (NRF) to look at public discourses around abortion,” she says. “That led to major funding from SANPAD for a comprehensive sexuality education project.”

SANPAD was the South African Netherlands Research Programme on Alternatives in Development. It was an SA-Netherlands initiative funded by the Netherlands Ministry of Foreign Affairs.

“Thereafter, my research was funded by the Mellon Foundation. This set up the critical mass of research to enable us to put in a proposal for a SARChI Chair.

The CSSR Project

“In 2014, I was appointed Chair of the Critical Studies of Sexualities and Reproduction (CSSR) programme,” says Professor Macleod.

“In our work, we take a specific decolonising feminist approach - that’s the lens we use. We use a range of analytical techniques. One of our favourites is a narrative-discursive analysis, which concentrates on the small and big stories that people tell about various sexuality issues and how these narratives are embedded in social discourses and power relations.

“Data collection generally involves interviews, focus group discussions, observations, online discussions, gathering relevant

media and policy documents, recordings of interventions, and focussed ethnography.”

Reproductive Injustices

Much of Professor Macleod’s work highlights reproductive injustices. In an online article published in the highly-regarded *The Conversation* platform, Professor Macleod tackles the subject of teenage pregnancy.

“Instead of asking, ‘How can teenage pregnancies be prevented’, we should be asking ‘How can reproductive injustices in relation to young women be reduced?’

“Reproductive injustices include clinics that are not youth-friendly, over-moralising and ill-prepared teachers, no on-site childcare facilities at schools and sexual violence from peers and adults. They also need to communicate the rights and conditions of legal abortions more clearly.”

“Childbearing in low-resource settings offers meaningful adult activity and strengthens family networks in these circumstances. In addition, having children early means you can rely on extended family for childcare. Finally, given a foreshortened healthy life expectancy, having children while young and healthy makes sense.”

In a recent book published by Wits University Press (2024), Professor Macleod and Dr Ulandi du Plessis tackle the issue of abortion in rural areas. Entitled *Abortion Services and Reproductive Justice in Rural South Africa*, the book highlights how access to abortion may be denied despite South Africa’s enabling abortion legislation. The conundrum of costs versus confidentiality is a key feature of the book - breaches of confidentiality lead to stigma and shame, which results in women seeking abortions outside their home area which, in turn, increases the cost. This double bind may see women accessing illegal (and often unsafe) abortions, self-aborting or being forced to carry an unwanted pregnancy to term. A review published in *The Lancet Infectious Diseases* describes the book as “a compelling and nuanced view”.

The Global Gag Rule

The USA-initiated global gag rule prevents foreign NGOs who receive U.S. funding from providing legal abortion services or referrals, while also barring advocacy for abortion law reform—even if it’s done with the NGO’s own, non-U.S. funds. The policy allows access to abortion only in cases of rape, incest, or when a woman’s life is at risk.

“We also did some work with the International Women’s Health Coalition, looking at the impact of the global gag rule,” says Professor Macleod. “South Africa gets a lot of aid from the US, and there are a lot of NGOs providing health services in this

country. And so, if an abortion-related item is part of their stable of offerings, they will not get funding.

“There were four (4) countries involved in the project: South Africa, Kenya, Nigeria and Nepal. Together, we researched the impact of the global gag rule on our countries and presented the findings to various members of the US House of Representatives and the Senate.

“One of the main findings was that when the NGOs were targeted by this rule, contraceptive use in their area of operation dropped, which encouraged the act of abortion, both legal and illegal.”

Contraception

The CSSR has an ongoing collaboration with Professor Tracy Morison of Massey University in New Zealand. The aim is to compare the use and prescription of Long-Acting Reversible Contraception across the two countries. In this work, they draw attention to what is called the “contraceptive paradox”: the ways in which contraception can be a source of empowerment and agency for some and a source of oppression for others. They found that providers in both countries espoused a person-centred narrative, indicating that users ‘decide for themselves’. However, this narrative unravelled in the face of, firstly, systems failures (funding, resources, institutional arrangements), and, secondly, coercion by providers based on their assessment of medicalized risk, a sense of being protective, and prioritising biomedical expertise over health users’ embodied knowledge.

Life Orientation

The CSSR is currently involved in a new project with Life Orientation (LO) teachers.

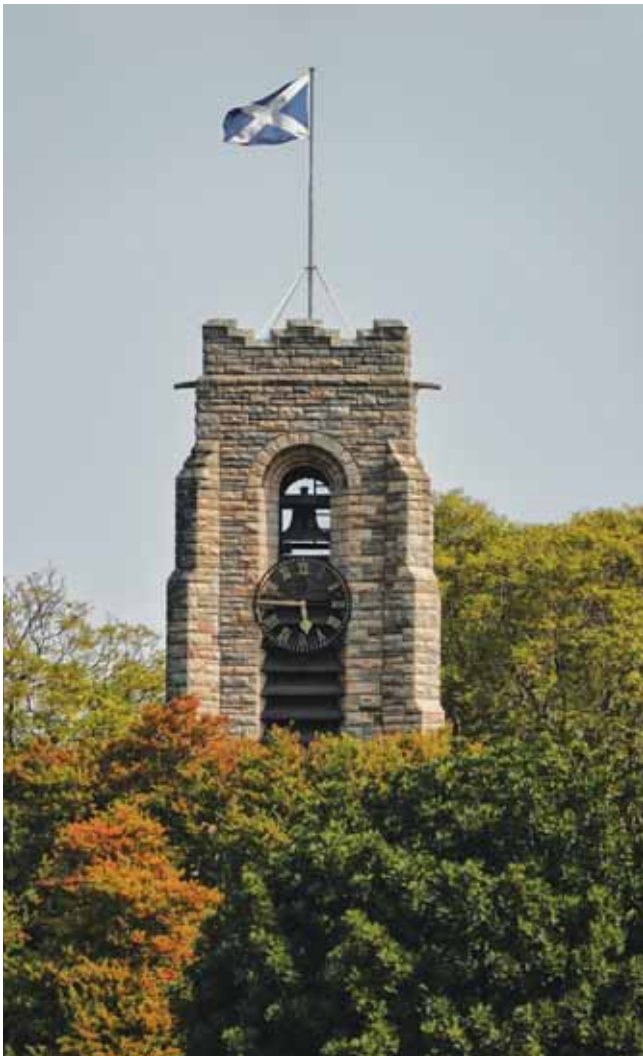
“We found that LO teachers had to deal with sensitive topics, brought to them by learners who had perhaps been traumatised,” says Professor Macleod.

“So the teachers often do not know how to react, what to do. As a result of this, we started a participatory project to support the LO teachers, who are really the frontline workers in this kind of education. They need to know how to listen, contain and refer when issues of sexual violence, domestic abuse, alcohol misuse, and bullying are brought to them.

“Teachers need those basic counselling skills to deal with distressed learners. They also need to know how to teach sensitive topics to learners in ways that acknowledge their diversity, for example, in relation to gender identity and sexual orientation.”

Action research and abortion counselling

Professor Macleod is clear that CSSR research is meant to effect change. An example of this is the abortion counselling project. “This started with baseline research in which we recorded abortion counselling sessions and interviewed health service provider and health users. We found that health service providers often try to actively dissuade women from having an



Photos: Chris Marais.

abortion. This is done in various ways, through talking about the foetus as if it were a fully fledged human being, outlining a number of exaggerated, and not evidence-based, risks associated with abortion, and invoking religion.

"We recommended the development of standardised guidelines for abortion counselling, and training healthcare providers in person-centred counselling. Then, we thought, 'Who is going to do this?', which is when we decided that we would. We wrote the guidelines and implemented in-service training. We used action research to refine the training, which has been offered three times. We are now in the process of investigating whether this training had an effect on the counselling provided by trainees.

Feminism and Psychology editorship

Professor Macleod was appointed as editor-in-chief of the international journal *Feminism & Psychology* (published by Sage) in 2013. During her tenure, the journal increased its impact factor as well as the range of countries from which papers were published.

"It has been a rare privilege to work with a range of top-notch scholars in the field. We - past and present editors - reflected in an editorial on the 30th anniversary of the journal about the significant contribution that the journal has made not only to knowledge production that highlights feminist issues but also feminist theoretical development. A particular highlight for me was the publication of a special issue on feminisms and decolonising psychology."

- Chris Marais

The CSSR Programme

The stated aims of the CSSR programme are to analyse the following:

- "Discourses and narratives (the technologies of representation) concerning sexualities (e.g. sexual orientation, 'adolescent' sexuality) and reproduction/pregnancy deployed in public and private spaces;
- The interstice between carers (such as health service providers and teachers) and the recipients of sexual and reproductive health or education services (the technologies of intervention);
- The range of taken-for-granted assumptions or absent traces (e.g. regarding the nature of adolescence, mothering, family formation and function, race and class) that underpin interventions with respect to, and representations of, sexuality and reproduction;
- How the governmental technologies of representation and of intervention achieve or undermine gendering, racialising and class-based effects, and lead to the continuation or discontinuation of sexual and reproductive health inequities;
- The manner in which particular discourses, narratives and practices regarding sexualities and reproduction are maintained or resisted in the everyday lives of men, women and their families;
- The manner in which the technologies of representation and the technologies of intervention promote or hinder sexual and reproductive health, sexual and reproductive citizenship and sexual and reproductive justice;
- How equal sexual and reproductive citizenship may be promoted through policy and practice."

About Catriona Macleod

Professor Macleod has written extensively in national and international journals in relation to teenage pregnancy, abortion, sexuality education, pregnancy support, reproductive decision-making, sexual violence, youth sexualities, and contraception.

She is author of the multi-award winning book *'Adolescence', Pregnancy and Abortion* published by Routledge in 2011, co-author (with Tracy Morison) of the book *Men's Pathways to Parenthood*, published by HSRC Press, 2015.

She was also the lead editor of *The Palgrave Handbook of Ethics in Critical Research*, published by Palgrave, 2018, co-author (with Pedro Pinto) of the book *A Genealogy of Puberty Science*, published by Routledge, 2019, and co-author (with Ulandi du Plessis) of the book *Abortion Services and Reproductive Justice in Rural South Africa*, published by Wits University Press.

Professor Macleod is editor-in-chief of the international journal *Feminism & Psychology*, and has written several technical reports and policy briefs.

Her work has informed the South African National Adolescent Sexual and Reproductive Health and Rights Strategy Framework, and the National Abortion Guidelines.

Her research has been taken up in interventions regarding alcohol use during pregnancy, abortion counselling and sexuality education.



She is the recipient of the Vice-Chancellor's Book Award (2012), Vice-Chancellor's Distinguished Senior Research Award (2015), the Vice-Chancellor's Community Engagement Award (2015), the Social Change Award (2017), South African Women in Science Award (2019), the International Society of Critical Health Psychology Lifetime Achievement Award (2021), HSRC/USAf Award for Team Research on Social Justice (CSSR) (2023).

- Chris Marais



Photos: Chris Marais.



Rhodes University Numeracy Chair

Professor Mellony Graven

Department of Primary and Early Childhood Education (PECE)



The Numbers Game

Ground-based research and development for intervening in a growing education crisis in South Africa are the watchwords of the Rhodes University Numeracy Chair.

The Rhodes University Numeracy Chair, established in 2011 and led by **Professor Mellony Graven**, is a critical partner in the national effort to improve the mathematics literacy levels of young South African learners, to develop better teacher skills and to build a solid body of research in primary maths education.

Professor Graven's counterpart in the long-term ongoing project was Professor Hamsa Venkat, who ran the SA Numeracy Chair at the University of the Witwatersrand.

Both Numeracy Chairs were part of a six-chair initiative mainly funded and wholly administered by the National Research Foundation (NRF) to research and address the crisis in maths literacy at South African schools. This came to be known as the South African Numeracy Chair project - SANC.

The Trends in International Mathematics and Science Study (TIMSS) 2019 revealed that at primary school level, South Africa had the third-lowest score of sixty-four (64) countries.



SAARMSTE Conference in Windhoek, *left to right*: Professor Mellony Graven, Tabisa Booil, Marisa Kumm, Emelia Shigweda, Sally-Ann Robertson, Lise Westaway, Tarryn Lovemore, Kevin Larkin, Silke Ladell and Tammy Booysen. *Front*: Wellington Hokonya.
Photo: Department of Primary and Early Childhood Education (PECE).

At Grade Nine level, they had the second-lowest score of thirty-nine (39) countries.

"In regional comparative studies we similarly perform worse than many of our poorer neighbours," says Professor Graven. "We also have among the highest inequality in performance among wealthier and poorer learners."

Two Chairs Sharing

At first, the task of the two co-operating Numeracy Chairs was to launch a period of intensive research so that the root causes of the problem could be better understood and addressed at a local level.

Critically, Mellony and Hamsa were in constant touch, sharing research findings from both ends of the country, attending national and international conferences to learn from education colleagues and developing a very special working process along the way.

"We did both research and development," says Professor Graven. "Our work was problem-instigated and solutions-driven. We partnered with schools and communities in mutually beneficial ways. We responded to challenges we saw on the ground and also investigated the effectiveness of our own responses. The local research was done with a view to a later national roll-out."

Facing a challenge of such magnitude also meant securing funding of a particular nature:

"The funding model stipulated establishing professional development (PD) with a minimum of ten (10) schools, allowing flexibility, and, following rigorous evaluation, up to three (3) five-year terms," Professor Graven said in a keynote address at a 2023 maths education conference in Australia.

"This long-term flexible Research and Development Chair model resulted in a grounded, organically-emerging network of research-informed projects with multiple iterations enabling continual strengthening and gradual up-scaling.

"I hope to challenge dominant funding models that separate research from development in tightly-defined short-term cycles, and rather point to the possibilities within models that enable the development of an ever-improving and expanding network of R&D projects, informed by school and community partnerships."

Winning over the Teachers

Working with sixteen (16) lesser-privileged schools in the Makhanda (formerly Grahamstown) area, Professor Graven and her Postgraduate student researchers found that the teachers were, on the whole, initially not keen to participate in the project.

"Teachers didn't really want to collude with researchers in telling their own negative stories," she says. "There has been a lot of teacher-hammering in the media, so they were very sensitive. There was a clear need to change those exploitative researcher-teacher relationships.

"Teachers are often blamed for the crisis and yet the nature of the support they receive tends to involve short-term information dissemination sessions by district authorities aimed at curriculum coverage and compliance. Teachers have been sceptical about participating in such programmes due to a perceived lack of benefit, and particularly sceptical of those programmes involving research as this so often meant colluding in producing negative narratives about their work.

"So the research became grounded in practice, based on reciprocal long-term relationships with about forty (40) teachers and principals. You don't really access good data without having established these trusting relationships. Sometimes in the very early stages of data gathering, teachers would give you very little in interviews or in questionnaires, or they would not be sure what they could or could not say. But once we developed this relationship, the data became more authentic. They also realised that we had a deep respect for the particularity of the experiences of teaching in South Africa."

The Language Barrier

For the majority of young South African learners, English is not their home language. Up to Grade Three, they learn in their mother tongue.

"But in Grade Four, the kids have to start learning in English and, at the same time, they have to cope with the shift in maths teaching from number counting to something more abstract and complex.

"At Grade One level, concrete unit counting is permissible. After that, they need to develop more of a number sense. But our learners were still unit counting in Grade Four. So we were trying to address that context and, at the same time, trying to address the teacher education crisis.

"Our Professional Development (PD) programmes were designed to bring these communities of teachers together with teacher-educators, international and national education experts, subject advisors and provincial coordinators. We would all be learners,

trying to find ways to go forward and rise to the challenge. We would bring research-informed resources to the project and the teachers would bring their critical experience."

In order to develop number sense in the learners, teachers in the project were given critical resources and taught how to use them.

Community Involvement

After the first five-year phase of the project, it became clear to the group that there was a need for the children to learn beyond the classroom.

"No amount of working with the teachers was going to make up for the fact that they were always getting learners who were two grades behind," says Professor Graven. "There was a need for learner-focussed, home-based interventions.

"In Makhanda, the parent community began to show an interest in how to get involved in their children's education. Whenever I would attend a prize-giving ceremony or a parent evening, I would talk to them about games they could play with their kids anywhere: at home having dinner, or while waiting for transport.

The SANC website, part of the larger Rhodes University site, offers a wide range of workbooks in PDF format, which can be easily downloaded. They include maths games, homework books, numeracy-focussed storybooks and dice and card games - perfect for use in the home environment.

The communities were challenging the widely-held notion that parents in disadvantaged areas had no interest in their children's schooling.

"That was one of the most important learnings for me," says Mellony. "And so we created the after-school mathematics clubs."



Department team, from left to right: Tabisa Boo, Sally-Ann Robertson, Mercy Kazima, Terrence Sitali, Mellony Graven, Tammy Booysen, Thulani Mathebula, Stella Mutlane, Marisa Kumm, Tarryn Lovemore and Adel Hartley.

Photo: Department of Primary and Early Childhood Education (PECE)..

Maths Clubs: A Success Story

"We started a little pilot club with ten (10) learners at one of our nearby schools. I went in with one of my PhD students and we ran this club. We would play various mathematics games, doing some problem solving.

"And then we also gave them each a book called *Number Sense* by Brombacher and Associates. It's a kind of fluency practice book where the kids complete a page a day. Most of the wealthier schools have them. There was no sense in creating a similar book. This one was not particularly expensive, so we bought them in bulk and every club we ran, we gave the learners copies, with the recommendation to do a page a day.

"I told them: 'It's your book. You can mess on it, you can tear the pages. Don't worry about being messy. If you make a mistake, scratch it out.'

"Normally, the kids get too scared to actually think mathematically and scribble, because they're waiting for the teacher to show them what to write. If they didn't write the right thing, they're going to have to scratch it out. That's untidy, and untidiness is not a good thing, they are told.

"So a lot of what we did would be to sit on the floor, you know, and ask the learners to try something. They'd sit there with their pen on the paper, and be too scared to do anything. I would take the pen and I would scribble all over the page, making it messy. I would make them scribble on the page. Once that was over, I would set them a problem to solve.

"Well, now the page was already messy. And all of them were prepared to give it a go. They weren't waiting for me to write the sum so they could copy. A lot of what happens in schools in mathematics is that kids are simply copying from the board into the book. The whole idea of the maths clubs was to break that teacher-dependence, to give the learners agency.

"Back to that little pilot maths club: even though I had told them to fill in five pages and bring them back to me, half of the group returned with the entire 48-page book done. Granted, there was some stuff they couldn't do. But it showed us how desperate the children were for take-home materials like a book."

Township after-care centres became the preferred sites of the various maths clubs that would initially emerge in the Makhanda area.

"We introduced some fluency games to teach the children strategies for working with numbers and began to create a different way of being for the learners in the clubs. Many of them would become catalysts in their own classrooms, initiating maths discussions with their classmates.

"Soon, we had this broad hub of overlapping communities with our researchers linked to all of them. We gathered incredible data showing amazing improvements in learners' results, which we then wrote up as research and presented at various conferences."

In the above-mentioned keynote address, Professor Graven put it more formally:

"The After School Maths Clubs were designed to be informal supportive learning spaces in which groups of learners and facilitators/teachers would explore maths, solve problems and play maths games free from the constraints of large class teaching with the pressure of curriculum conformity.

"To date, hundreds of Maths Clubs have been set up across grades and provinces and we (our Chair and various NGOs) have formed a Maths Clubs Collective of partners collaborating to provide quality club resources and support to those willing to run clubs. The scalability of the Maths Clubs thus emerged organically from SANC's local work, expanding nationally in partnership with DBE teacher educators and NGOs."

Community of Practice (CoP)

Wikipedia describes CoP as:

"Groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly."

Professor Mellony Graven says that by participating in the learning communities described above, everyone involved learns something special.

"My researchers and I set ourselves up as co-learners," she says. "Most of us don't live in the communities where we work, so we learn about them. We are also finding out about the grounded nature of teaching and learning in this environment. But we do bring expertise and resources through funding from the NRF. We have incredible opportunities to bring powerful research-informed resources to share with teachers and our community of researchers.

Mental Starters Assessment Programme (MSAP)

"Our most nationally scalable project became the Mental Starters Assessment Programme (MSAP), working with the 10-minute warm-up time at the start of lessons. There was still persistent counting, so we wanted a time-space during which the teacher could show the learners specific maths strategies and rapid recall skills.

"Warm-up time was being used in the classroom, but not effectively. There was number chanting, instead of learning to see specific patterns in the numbers. We noted that the curriculum generally contained the various strategies, but they were not being applied.

"The Department of Basic Education (DBE) was very keen on diagnostic assessments. MSAP would provide that, but also impart six (6) important maths strategies to the learners, and improve their number sense."

In a 2019 joint paper written by Mellony Graven and Hamsa Venkat, the authors state:

"The diagnostic assessment pilot intervention was focussed on promoting strategic use of calculation strategies and aimed



The SAARMSTE Conference, January 2023 in Bloemfontein. The Rhodes and WITS SA Numeracy Chair teams keeping the “buzz” of primary mathematics education alive.

Photo: Mellony Graven.

to move learners on from the concrete one-to-one counting methods that persist in Grade Three and into higher grades.

“Working with a broader team of mathematics education specialists...we designed a series of assessments that focus on key calculation strategies such as bridging through ten. Each assessment was accompanied by interim lesson starters for teacher use in 8-10 minute mental mathematics sessions.

“These were designed to develop learner fluency in each of the focal strategies and related skills. The pre- and post-assessments allow teachers to track improvements in student learning. The pilot focussed on the “bridging through ten” strategy in seven (7) classes across the Eastern Cape and Gauteng provinces.

“Positive results indicate that the format of these assessments paired with the lesson starters is potentially useful for broader national trialling and implementation. This work feeds into the need for diagnostic assessments that inform teaching focussed on strategic efficiency rather than simply accepting correct answers produced through highly inefficient means.”

The MSAP is now being implemented across Grade 3 classrooms after national piloting in all provinces showed positive results.

Professor Mellony Graven

Growing up in the mining community around Rustenburg, Northwest Province, Mellony Graven was often told by her maths teacher at school:

“You ask too many questions.”

Her family, however, supported Mellony’s quest to know more about numeracy.

“I learnt how to deal with numbers as a child, by playing cards - a lot,” she says. “I would play Canasta and Patience, and often I would make up my own number games with the cards.”

Studying mathematics at the University of the Witwatersrand was, initially, a very sobering experience for Mellony.

“There was a big gap between my school maths and university maths,” she says. “I got 29 out of 100 for my first paper. My mother said to stick it out until the end of the year. I persisted, caught up and was soon flying. If I didn’t understand a thing, I would knock on my lecturer’s door and ask.

“In my Honours year, I was also lucky enough to work with two woman students who were rusty after years of raising families. So we sat together and figured problems out together. We had our own little maths club going. In that Honours year, I got 100% for two modules, something that had not been done before. How did I get that? By failing, and picking myself up again.

“When I went teaching in Grahamstown (now Makhanda), I was funded to run a maths centre and also do development work with township kids in partner schools. I encouraged them to form study groups, work things out on their own and then only approach me for help once they were stumped.”

People often ask Professor Mellony Graven why, with her obvious talents, she never became a high-earning actuary. Her answer is simple:

“If I want to help rebuild South Africa, this is the perfect job for me.”

- Chris Marais



SARCHI: Square Kilometre Array Research
Chair in Radio Astronomy Techniques
and Technologies

Distinguished Professor Oleg Smirnov
Department of Physics and Electronics



Adventures in Deep Space

A brilliantly engineered radio telescope in South Africa, paired with some of the best minds in radio astronomy software, is revealing phenomena in space no one could ever have predicted. **Distinguished Professor Oleg Smirnov**, who holds the Square Kilometre Array Research Chair in Radio Astronomy Techniques and Technologies, shares some of the discoveries.

When Distinguished Professor Oleg Smirnov was head-hunted to lead radio astronomy research at Rhodes University in 2010, he didn't know much about South Africa.

He knew he might be working on an upcoming new radio telescope called MeerKAT, but he also had no idea then that this would turn out to be an exquisitely sensitive scientific instrument, possibly the best radio telescope in the world for imaging.

Before 2010, Smirnov had come to a conference in Cape Town only once, in 2006. And of course, since radio astronomy is "essentially a village where everyone knows everyone else," Oleg knew his South African counterparts like **Professor Justin Jonas** quite well.



Square Kilometre Array MeerKAT 7, telescopes in the Karoo, Northern Cape.
Photo: Chris Marais.

It was Justin Jonas who had approached him to head up the Rhodes University Centre for Radio Astronomy Techniques and Technology (RATT) research team. Oleg Smirnov had then been working at the Netherlands Institute for Radio Astronomy (ASTRON) for more than twelve (12) years. He had helped set up ASTRON's Low Frequency Array (LOFAR), and his reputation for developing radio astronomy software was stellar.

At the time, South Africa was still waiting to hear if their bid to attract the Square Kilometre Array to a radio-quiet corner of the Northern Cape Karoo would be successful. The seven-dish prototype Karoo Array Telescope (KAT-7) had just become operational and was starting to deliver data.

Crucially, the South African Government had just committed to building another sixty-four (64) radio telescopes (MeerKAT), which would either be merged into the SKA or function on their own if the bid was not successful.

Oleg joined Rhodes University just before the news came that South Africa, along with Australia, had won the bid.

"It was great. I felt I had made the right decision. Even if South Africa hadn't won the bid, we would have had MeerKAT in any case."

World-Class Imaging Toolmakers

Rhodes University's Centre for Radio Astronomy Techniques and Technology (RATT) basically works on creating the 'tools' used by specialist radio astronomers all over the world in order to make sense of the data pouring in through the radio telescope receivers.

When they are pointed at a part of the sky, highly specialised software - and hardware - is needed to render the radio waves into images that can be understood and analysed.

It is an exciting time for scientific endeavour in this field.

"I think it's no exaggeration to say we are way ahead of the game with radio astronomy in South Africa. Where it comes to imaging techniques, and what the telescope can do, I think MeerKAT is absolutely the top telescope in the world right now.

"Both in terms of the telescope capabilities, and in terms of the data processing techniques that my group is developing, we are leading the world. We don't have to be modest about that," says Professor Smirnov, now an A-rated scientist.

An Exciting Community

"The high profile of astronomy in this country motivates a lot of people. It's also good to see there are young scientists coming to Rhodes University from other African countries like Kenya, Mozambique, Mauritius, Zambia and Ghana.

"Once they get into radio astronomy, students get even more motivated because it is a small field and it tends to operate in a kind of flat and non-hierarchical way, so you don't have to climb the ranks to actually come in contact with people at the very top.

"One day you start your Master's degree and next thing you know, you're at an international conference having a beer with some of the world's most eminent scientists.

"It's very exciting for them. I find I don't need to make any special efforts to motivate people. Usually it's the opposite; I need to remind them to step off the pedal a little and mind their work-life balance. The motivation takes care of itself."

Astronomy and Software

"Of course, we are not the only University group using MeerKAT. Our group started out as pretty technical, focusing on developing data processing techniques and software. The people who are attracted to us are the more technically-minded ones, those who are interested in astronomy but who are really good at software.

"That said, our two Research Fellows, **Dr Kenda Knowles** and **Dr Mpati Ramatsoku**, have balanced this out quite nicely since they've joined us. They are astronomers first and foremost, but have a strong interest in techniques. It's a perfect complement to the technical side of the group.

"Other groups tend to be more into pure science, so they don't have as much expertise as we do in actually processing the data. They are more likely to be users of our software. Which is great, because every software author wants users to test and give feedback on their products.

"But all the various University groups working on MeerKAT tend to complement one another and work together really well. It still has a small community feel to it, where everyone knows everyone else. Well, I said small - there are maybe seventy (70) fully graduated radio astronomers in the country by now. That's up from two and a half back in 2003, when the whole effort started. The Human Capital Development (HCD) programme has done an absolutely amazing job here."

In 2023, RATT won the National Research Foundation's prestigious Science Team of the Year award.

The Glue that Holds it All Together

Professor Smirnov also heads up the Radio Astronomy Research Group, part of the South African Radio Astronomy Observatory (SARAO) in Cape Town.

"Not all in the research group are funded by SARChI. There is some other funding coming from SARAO for Research Fellows, Postdocs and students; there are various bilateral grants for international collaboration, and we're also getting funding from the Breakthrough Foundation for SETI (Search for Extraterrestrial Intelligence) related work.

"But what's great about the SARChI Chair, is that it's kind of the glue that holds everything together. It's great to have funding that we can use to cover gaps, and enable the people funded by other means to work together. That's the sort of flexibility the Chair funding provides. The whole then becomes greater than the sum of the parts.

"It's a nice, diverse group. There are two (2) Research Fellows, four (4) Postdoctoral Fellowships, and twenty-odd PhD and Master's students. The core mission of the Chair, of course, is capacity building - supervising the Doctoral and Master's students. We do have a very nice crop of graduates coming up next year. I don't think we've ever had more than two or three in a year, but next year we'll have seven or eight at once."

The Engineering Surprise

Many of those now working on MeerKAT's data are in awe of the extraordinary sensitivity of this scientific machine.

"MeerKAT is so good because the engineering is absolutely phenomenal. To me, this was a big eye-opener," said Professor Smirnov. "Not knowing much about this country when I showed up, I was surprised at the excellence of the engineers who worked on this project."

"The world is discovering now that South Africa is a major scientific destination, thanks to the MeerKAT project and the SKA site decision."

Ian Heywood, a researcher at Oxford University in England, and a Rhodes University Visiting Professor, had this to say during a 2023 presentation on MeerKAT's imaging capabilities:

"MeerKAT is 1.7 times over the spec. This is something that never happens in radio astronomy. It usually goes the other way around. This is down to the phenomenal talent and hard work of the people who made it in South Africa. I really want to impress upon you what a leap forward this telescope is," Heywood told RATT Researchers and Postgraduate students.

Professor Smirnov refers to Ian Heywood as "a black belt radio astronomer who has made some of the most stunning images with radio telescopes, most famously the Galactic Centre image that was revealed when MeerKAT was inaugurated in 2018".

Professor Heywood used software developed by Professor Smirnov to create it.

Heywood added: "There's a stunning amount of algorithmic development that goes on here. Not only does South Africa have the best radio telescope in the world, I think the centre of gravity in terms of the algorithmic and data processing side of things is shifting to this part of the globe.

"I have a list here of all the software packages that I would never in a million years be able to write myself, but I certainly

make use of them. And I just want to point out how many packages were developed by Rhodes University.”

A Very Mysterious Anomaly

Radio astronomers generally work by obtaining static images of the sky. The telescope tracks a fixed location in the sky over several hours, accumulating terabytes of data. These are eventually processed to make a deep image, typically containing thousands of galaxies and other objects.

But in 2020, with the once-in-400-year-conjunction of Jupiter and Saturn, RATT and the Radio Astronomy Research Group (RARG) decided to make a movie instead of a static image. It was nine hours long and captured the stately ‘approach’ of these two gas giants as they converged on the same piece of sky. Jupiter is notoriously difficult to capture in the radio due to its rapidly rotating radiation belts.

“It pretty much required that a movie be made, by definition,” said Professor Smirnov. He and his colleagues thought this might be a “fun and challenging technical exercise”.

In addition to the two planets, they were thrilled to see two spectacular Fanaroff Riley Type II Radio Galaxies in the background, emitting massive jets of plasma in characteristic lobed or barbell shapes, indicating supermassive black holes at their centre.

A Piece of Luck

What they did not expect to find was a brand new and very strange astrophysical phenomenon. During the ‘movie’, something flashed on and stayed on for 45 minutes. Then it winked off and stayed off. No one had any idea what it could have been.

It has been exercising RATT minds, machines and funders since then.

“It was a piece of luck, that I happened to be making a movie of that particular patch of sky. But if we were to be making movies all the time, then we could locate many more of these things.

“Back then, the question was: are we really so lucky, or is this thing very special? Or, are they all over the place, and we’ve just not been looking? Of course, the instinctive answer for astronomers is the Copernican principle: we are not special, we are not lucky. That means we have to start looking, because if we see one pretty much the first time of trying, these things must be going off all over the place.

“Think of a photograph with a long exposure, such as a moonlit landscape. If there’s something transient during your exposure, let’s say a torch in the distance switching on briefly, what are you going to see in the photograph? You’ll see something, but you’re not going to know if it was a faint light that was on the entire time, or a bright light that was on just briefly.

“You’ll just see the average over time of everything that was going on during your exposure, and you have no way of telling

what its dynamic behaviour was. And that’s the reason why these things in the sky aren’t being found as often as they could be. To find them, you need to make a movie and go through it frame by frame. If you can do that, you will pick up that something is changing.”

The RATT PARROT

Over the following months, MeerKAT was again pointed at the same patch of sky, hoping for more clues.

“It winked and winked again. Eventually, MeerKAT pinned down the source to a possible pulsar, but it didn’t act like any other pulsar we knew. It occasionally experienced amplification by factors of ten or more within minutes. When we discovered it during the conjunction, it was amplified a hundredfold! Such extreme amplification behaviour, known as ‘lensing’, on such short timescales is virtually unprecedented,” confirmed Professor Smirnov.

Meanwhile, the newfound pulsar was dubbed PARROT (pulsar with anomalous refraction recurring on odd timescales).

“Of course, we loved this acronym. *The Rat & Parrot* has long been a favourite watering hole for Rhodes University staff and students. In fact, one of the technical breakthroughs that made this discovery possible started over drinks at *The Rat & Parrot*. In a way, it feels like we are paying homage to that.”

A paper on this phenomenon, co-authored by Professor Smirnov, was memorably titled: “The RATT PARROT: Serendipitous Discovery of a Peculiarly Scintillating Pulsar in MeerKAT Imaging Observations of the Great Saturn-Jupiter Conjunction of 2020”.

Make More Movies

“It’s easy to say, we just have to start making movies of all our data. But there’s a whole lot of technical detail that goes into that. And then when you actually see the movie, you realise that things appear to be moving and changing all the time. It’s the atmosphere, it’s the electronics of the telescope, there’s a lot of distortion and interference you start seeing when you make a movie. So it might look like an interesting event, like another PARROT perhaps, but most of the time, it’s just a passing distortion, not ‘real’ in the astrophysical sense. And that’s what makes this business challenging.

“One of the RATT’s recent new funders is Breakthrough Listen (BL), part of the Breakthrough Foundation. BL is dedicated to the Search for Extraterrestrial Intelligence (SETI). They are very interested in what radio astronomy ‘movies’ can potentially identify.

“There’s a natural overlap with the astrophysical transients area. The SETI people are looking for something they call ‘techno-signatures’ from other civilisations. Not necessarily someone trying to communicate with us, but some radio signal that points to something technological going on.

“Think of an airport radar, for example. If you had a radio telescope far out in space, and you were to point it back at Earth and pick up a powerful airport radar signal booming

around, you'll think, okay, this doesn't look astrophysically natural, there must be technology down there. Realistically, that's the kind of signal SETI people are hoping to find.

"So the Breakthrough Listen project is also quite interested in this whole movie-making business, finding unexpected things popping up in images. Because technosignatures are, by definition, also examples of unexpected things popping up. If you're going to get better at looking for the astrophysical ones, it puts you in a good position to look for the technological ones too."

A Gold Mine in the Archives

In the next few years, a consortium involving South Africa, Germany and Italy is building the MeerKAT Extension, adding 15 more antennae.

"That will considerably improve MeerKAT's capabilities, make it a lot sharper and quite a bit more sensitive. Obviously, in the long term, SKA is going to be built around MeerKAT, like a shell around a dense core."

MeerKAT now has six years' worth of data in its archives at the Centre for High Performance Computing.

"Because of the discovery of PARROT, we are now thinking there must be a gold mine of these things hiding in the archive."

All that data is sitting there on disc and tape. Scientists who have been allocated observations have a proprietary period where they have exclusive access to the data. After that, it's all available for anyone who wants to look.

"MeerKAT is always operating, always looking at some section of the sky. So you could have one part that was constantly making a movie and then you could pick up transients like PARROT in real time. And that would be very exciting because you could do what is called a 'trigger alert' which goes out worldwide to the community.

"Then other telescopes could pick up these alerts and swing around to point at the same spot. In optical astronomy they do this already, usually with smaller telescopes. They do it for things like asteroid hunting.

"In radio it's never been done because of the complexity of processing the data in real time. If it's possible, that would really be a world first.

"Anyway, while testing our prototype archive-mining software, we've already found another two transients, in one of the PARROT observations of all places! And we've barely started looking."

- **Julienne du Toit**

Introducing some of Distinguished Professor Oleg Smirnov's Postgraduates:



Ntsikelelo Charles

PhD Graduate, Physics and Applied Mathematics

Ntsikelelo Charles is a PhD graduate. Born and raised in Makhanda, he matriculated from Ntsika Secondary School before enrolling at Rhodes University to major in Physics and Applied Mathematics.

"My undergraduate studies were funded through a SARAO bursary, but I joined the Radio Astronomy Techniques and Technology (RATT) group in my first year of Masters in 2019."

His main area of research at RATT is in modern cosmology, which is a study of how our Universe came to be, how it got to state that it is now, and its ultimate fate.

"We use a locally-built radio interferometric array, the Hydrogen Epoch of Reionization Array (HERA), which is situated right next to the MeerKAT telescope. This work is done in collaboration with researchers from SARAO, the University of California, Berkeley, and the Massachusetts Institute of Technology.

"I feel my PhD thesis has managed to make a meaningful contribution to research, with two papers published so far, and another in the pipeline."



Benjamin Hugo

Software Developer, South African Radio Astronomy Observatory (SARAO)

Benjamin Hugo is a software developer with the South African Radio Astronomy Observatory (SARAO) in Cape Town South Africa. He did his undergraduate and Honours degrees at the University of Cape Town, where he focused on Computer Science.

During his Masters, Benjamin researched the development of a facet-based widefield imager for synthesis imaging in radio astronomy.

Now completing his PhD at Rhodes University, Benjamin has focused on various aspects of MeerKAT telescope commissioning, including calibrator characterisation, MeerKAT polarimetric characterisation, and the development of direction dependent calibration tooling for MeerKAT and other SKA precursors.

“My software interests include developing tooling in radio imaging, calibration, simulations and pipelining in support of science operations. My scientific interests are galaxy clusters, and radio polarimetry characterisation and ionospheric research. I am actively involved in developing tooling for the Open Source Transient Array Radio Telescope (TART) project, which is being developed as a low-cost platform for human capacity development.”

TART telescopes have already been deployed at Rhodes, in Mauritius and in Kenya, with more construction in the pipeline.



Lexy Andati

Lexy Andati is from Nairobi in Kenya.

“I did my undergraduate degree in Microprocessor Technology and Instrumentation at the University of Nairobi, after which I pursued a radio astronomy based Masters and PhD at Rhodes University, under the SARChI bursaries.

“My Masters was rather technically oriented as we developed a visualisation tool for diagnostic data (visibilities and calibration solutions) from a radio-imaging pipeline. On the other hand, my PhD focused on investigating the magnetic environment of the radio galaxy Pictor A using spectropolarimetric data from the MeerKAT telescope.”

This project encompassed most aspects of radio astronomy, from the initial data reduction to the final science-ready images and scientific analysis.

“The data was used to develop and test some software tools for radio spectropolarimetric analysis, integrating my computational expertise with the technical aspects of radio astronomy.”



Photo: Chris Marais.



Victória da Graça Samboco

PhD Candidate

Victória da Graça Gilberto Samboco is from Mozambique, and has a BSc in meteorology from Eduardo Mondlane University where her final research project focused on using machine learning classification techniques to analyse satellite images with the aim of detecting flooded regions.

"I recently completed my MSc with distinction at the Radio Astronomy Techniques and Technologies (RATT) group. My MSc project involved developing a solar imaging pipeline (SolarKAT) to mitigate solar interference in MeerKAT data. This work aimed to enhance image quality and preserve flux measurements by removing the contribution of the Sun from the affected data."

The SolarKAT pipeline employs innovative computational techniques to improve the reliability and clarity of radio astronomical observations conducted in the presence of the Sun.

"Currently, I am pursuing a PhD at RATT, focusing on pipelines for image-plane transient detection with the MeerKAT telescope."

- Julianne du Toit



SARChI Research Chair in Molecular and Cellular Biology of the Eukaryotic Stress Response

Professor Adrienne Edkins
Department of Biochemistry, Microbiology
and Bioinformatics

The Secret Lives of Chaperones

At cellular level in your body, the most unimaginable processes are taking place at a speed and volume impossible to imagine. How are these supervised and refined to produce the right effect in the right place? Just ask **Professor Adrienne Edkins**, SARChI Research Chair in Molecular and Cellular Biology of the Eukaryotic Stress Response.

Every nanosecond of every day, parts of your body are talking to other bits. The pancreas might need to secrete insulin needed to mop up the excess sugar in your bloodstream, for example.

Or your heart might be required to beat faster in response to fight or flight. Your immune system might be called on to wage war against bacteria. Or more enzymes are needed in the gut to process the three lamb chops you just wolfed down.

Billions of messages are passing back and forth incessantly in your body, each one encoded in protein molecules that take on a highly specific and complex shape, like origami.





Left to right: Ronald Tonui, Richwell Mhlanga, Jessica Watson, Kelly Schwarz, Adrienne Edkins, Morapeli Moleleki, Apelele Ntlantsana, Anita Ndanbeni, Nyeleti Vukea and Elisa Kirigin. Photo: Chris Marais.

Protein is made up of amino acids, its identity coming from the different combinations, all lined up.

Then, in order to fulfil its function, this scrap of protein must twist and fold into a three dimensional shape within fractions of nanoseconds. And nearly every single time, it is absolutely perfect.

The mystery is: how does this random scrap lurking in a cell know how to leap into a uniquely bizarre and specific shape with a highly specific meaning attached to it?

Kindly Aunties

The answer lies in the chaperones. The Merriam-Webster Dictionary defines a chaperone as: "An older person who accompanies young people at a social gathering to ensure proper behaviour."

But in the world of Biochemistry and Microbiology, there is another meaning:

"Any of a class of proteins (such as heat shock proteins) that facilitate the proper folding of proteins by binding to and stabilising unfolded or partially folded proteins."

If you are picturing a Disney-esque scene involving kindly aunties who supervise a production line of napkins folding themselves at unimaginable speeds, you wouldn't be too far off the mark.

This is the field of study that continues to fascinate Professor Adrienne Edkins, who holds the SARChI Research Chair in Molecular and Cellular Biology of the Eukaryotic Stress Response.

In particular, she is dedicated to the study of what happens when things go wrong in this process. Misfolded proteins contribute to disease - notably cancers. Viruses and bacteria succeed in body invasion by first capturing the chaperones, and forcing them to produce their own proteins.

Adrienne Edkins and her team aim to identify potential treatments. This hinges on intimate knowledge of the chaperones' roles and actions.

Where it Started

Even as a schoolgirl in Harare, Adrienne was fascinated by biology. "It always made sense to me. I just found it easier than anything else."

Yet when Adrienne arrived at Rhodes University in 1997, she thought she might study Information Systems.

"It was that sort of era. There were all these computers and new technology, and it was just becoming a lot more mainstream. Thank goodness I changed to a straight BSc. Goodness knows what the Department of Computer Science would have done with me.

"Fortunately, biochemistry, which is the discipline I'm in now, is a second year major. I got into it and biochemistry, and obviously, I've just never looked back."

After her Honours and Master's studies at Rhodes, Adrienne did a coursework Masters, this time in forensic science at the King's College in London, thanks to a Beit Fellowship.

"Obviously, forensics was really interesting, but I just don't have the stomach for it. I mean, conceptually and intellectually, it's great, but I just cannot handle the smell and all of that kind of stuff. I thrive in a nice, clean, sterile laboratory-based environment."

While Adrienne was in the UK, she started applying for funding for her PhD studies.

"I was very fortunate to get a Wellcome Trust Programme. They are big funders of biomedical research, and this bursary is designed as a sort of opportunity for you to try different fields, and then decide where you want to go for a PhD. So I ended up at the University of Glasgow."

The Glaswegian Accent

There were nine other people on the course, all of them from somewhere else - Canada, Northern Ireland, Nepal, Greece, Austria, Germany and Czech Republic.

"We really invested in each other, and we were our own network. Many of us have stayed in academia, and still keep in touch, which has been great."

But it wasn't easy at first. Glaswegian accents are renowned for being completely incomprehensible to the foreign ear.

"When I first arrived in Glasgow, the accent sounded so foreign, I thought: There's a lot of French people here. By the time I left nearly five years later, I would only notice an accent if it wasn't Glaswegian."

Adrienne's Doctoral thesis focused on a virus that causes cancer in immunosuppressed individuals - a huge problem in Africa. But nine (9) months into her studies, her supervisor moved to another university. Because the funding was tied to the University of Glasgow, she changed her work on leukaemias, and how the cell's surface proteins communicate with the cell, telling it to produce cytokines which control the growth and activity of immune system cells.

She thoroughly enjoyed her studies, but after her graduation, she was missing home.

"The weather got to me. You either don't see darkness or you don't see any light. There seems to be nothing in between."

The Legacy of Greg Blatch

The first person Adrienne contacted was Professor Greg Blatch, who had supervised her Master's degree at Rhodes University.

"He's left now, but he was a phenomenal scientist and mentor. In South Africa, he was instrumental in setting up the field of

research that I'm in now in - proteostasis, or protein folding. He was amazing at supporting young researchers, so magnanimous, willing to help, open, sharing and supportive. That's not always the case in academia."

As it turned out, there was a Postdoctoral Fellowship position available at Rhodes. Adrienne successfully applied for it, plunging back into the intricate, minute world of protein folding.

Enter the Chaperone

"All the information needed to fold that line of protein is inherent in it. The sequence of the different amino acids determines the identity of the protein, and what its function is - whether it's structural, whether it has enzyme activity, where it's going to sit in the cell, for example."

Everything is studied at cell level, the smallest unit of the organism. And within this tiny, very crowded space, the protein has to fold into its shape.

"How does it not go wrong? How does it fold into the needed structure on a timescale that is biologically relevant - in nanoseconds? Some proteins are better at folding than others, but we're interested in studying a conserved system of proteins whose role is to help other proteins fold."

"They are sort of analogous to human chaperones. They sequester a naive young protein, they look after it, make sure it doesn't participate in any unwanted side reactions, and allow it to achieve its mature state intact. Very much like a kind aunty."

Then, unlike an aunty, it may discard the protein if it is beyond repair, or if it begins clumping together (aggregating) with other proteins.

"It degrades and recycles the protein, otherwise it would start to mess with all the other system going on in the cell."

How Things go Wrong

If a cell experiences environmental stress, like heat, or toxins like heavy metals, the folding process is affected.

"Then there's a heightened requirement for these chaperones, so you have an evolutionary conserved response that is needed to help cells survive transient stress."

"But what can happen in a state like cancer, for example, is that mutations can be considered a form of stress. So let's say now we get a cancer-causing mutation in a particular protein. You get a deviation now from the sequence. You are now getting a deviation from the structure that may be less stable, that might then be recognised preferentially by the stress response system, and what it would do then, is stabilise that protein and allow the cancer phenotype to be exhibited."

"So a system that should be there to help you survive instability caused by transient stress becomes hijacked and sustains cancer."

Stopping Cancer Before it Starts

What can be done to disrupt this process?

"If we can selectively inhibit that chaperone, we can destabilise the oncoprotein, which means you can stop the cancer. And the reason for targeting the chaperone rather than the cancer protein, is that you might have multiple different mutations, but you'd still just have the one chaperone."

"So rather than having to come up with five different drugs for five different mutations, rather just focus one on the chaperone. The tricky part is, how do we selectively inhibit only the cancerous state versus the normal stress response?"

"There is some evidence that there are biochemical differences we can exploit, and that's the drug discovery angle. We are characterising the system, trying to understand the differences between healthy and diseased. If we find a good protein to target, then we can see if it is amenable to inhibitors."

How to Subvert a Chaperone

But cancer is not the only time things go wrong at this sub-microscopic level. During infectious diseases, a human host will typically have a stress response to a pathogen.

"Heat shock is a classic part of many pathogen's life cycle. If you think about malaria, your body will develop a high fever of up to 42 degrees celcius. That's your body's response to get rid of that virus. The same with the Tuberculosis bacteria, the malaria parasite, and other diseases like African sleeping sickness (*Trypanosoma*).

"The malaria parasite, as an example, will then have very high levels of its own chaperones to look after its proteins. It actually spits out chaperones into the red blood cell to remodel that cell."

"It basically 'remodels the room' to its liking, allowing it to survive. And then there are viruses and they have a really interesting angle around protein folding. The thing about viruses, is that they're essentially classed as dead. They have to be inside a host in order to replicate, and they can only do that by using the host's machinery."

"Viruses have to make their own proteins, and they do this by sequestering or recruiting its host's chaperones to preferentially fold its own proteins instead of the host's proteins. How does it adapt its proteins so that they can be recognised and foldable, if you like, by the host system?"

"And can you find sensitivities where you can tweak the system to such a point that the viral protein is affected, but not the host?"

SARChI with a Long Name

In 2014, while Dr Naledi Pandor was Minister of Science, there was a call to women leaders in science.

"Normally a SARChI Chair is based around a certain area of research, but this time the NRF put out a call to individuals to apply with their projects. I was relatively junior at the time, but the Deputy Vice-Chancellor of Research at Rhodes really encouraged me and helped me to apply."

"That's another reason I am really grateful to be at Rhodes University. I've had amazing opportunities, and I haven't been told no, you're too young, get in line and wait. Which is probably what would happen at bigger institutions."

"There were three of us who were awarded SARChIs in that call. The title of my research Chair is Molecular and Cellular Biology of the Eukaryotic Stress Response. And I really wish I hadn't chosen such a long title. I was just so excited, and came with a grand name. Now it's sort of chiselled in stone. If I could choose again, I'd probably pick Proteostasis in Health and Disease."

Being awarded the SARChI Chair has been an inflection point, says Adrienne.

"It's allowed me to have the time to focus on research. You can always find more students, more funding, more ideas, but the most valuable thing, the defining factor, is time given to pursue research."

The other wonderful aspect of a research Chair is working with young Postgraduates.

"They're motivated, they're keen, they're the brightest of the lot, and so it's an absolute pleasure to work with these talented young people. And again, they are from all over world."

The Chair has opened doors and attracted funding.

Thanks to DAAD funding (the German equivalent of NRF), Adrienne's laboratory has attracted students from Nigeria, Zimbabwe, Zambia and further afield.

"It creates a melting pot of experiences and expertise where everybody can learn and work together with the South African students, and it creates a diverse, intellectually stimulating environment. That is my real love and passion."

The Herpes Virus and Kaposi Sarcoma

Adrienne's research has almost come full circle to the subject she first wanted to engage with at the University of Glasgow - immunosuppressed, HIV-associated cancers, in particular Kaposi Sarcoma-associated herpesvirus.

"We now have a big international grant, working with a collaborator in the UK to look at how these viruses fold their proteins, and how the host chaperones influence the ability of the virus to replicate and make copies of itself, and hence go on and cause the cancer.

"The virus itself is quite interesting. It's a herpesvirus, so it forms a persistent infection. It goes into your cells and just sits there, dormant. Then, depending on certain environmental conditions, some of which are stress-related, it will pop into life, start making copies of itself, and release more viruses, which go out, infect your cells and then sit dormant again.

"So that during that period of dormancy and latency, they're not making huge amounts of protein. It's a kind of quiescent state, where there is no real requirement for chaperones. But if you are a virus wanting to rapidly make 80 different proteins in a very short period of time, assemble them into a virus package with the DNA, and get out of the cells so that you can be infectious, then you have a massive requirement for the protein folding system.

"The idea is that if we can understand that process, we may be able to identify areas where we can come up with new inhibition strategies that could lead to a sort of petering out of the infection. Or at least keep it under control."

Africa's Health

This project, highly relevant to Sub-Saharan Africa's health needs, is funded through a UK Research and Innovation (UKRI) MRC grant, also called the African Research Leader Grant. It funds collaboration with experts at Leeds University.

"So part of this grant is really not only to do that research, but also to establish the ability to work on health issues that affect us in Sub-Saharan Africa. Because this is a huge problem in South Africa, but an even greater one further north of us, where research systems are less developed.

"There's a strong ownership role around our health, and setting up those platforms, creating capacity in terms of research so that we can participate in solving our own problems. We're actively trying to do the fundamental research, training people in skills that are not common."

Adrienne's team is also working on Tuberculosis, a bacteria with a long-term persistent phase.

"We've worked on anti-malarials with the Bill & Melinda Gates Foundation on an African Drug Discovery Grant facilitated through Professor Kelly Chibale's highly successful drug discovery unit, H3D at the University of Cape Town. We've worked with GlaxoSmithKline in Tres Cantos outside Madrid in Spain. This way, we are getting much closer to a translation of the research, not just providing for patients.

"It's been so exciting, starting with a little proof of concept study around drug discovery and now we've got a collaboration with GSK, and hopefully that means we will be closer to going into the more translational or implementation aspects.

"It's basically getting to the point where we see that there is a molecule with potential. Now can we develop it into a drug? Because that process is hugely expensive, and it's not really done at universities - simply because it's not necessarily coherent with training of students."

The Miracle of Life

Professor Edkins has lately been entranced by an inordinately powerful microscope, jointly funded by the NRF and Rhodes University.

"We can literally see what happens to the chaperones, where they go in the cell. We can stain one chaperone red and the other one, still in the cell nucleus, in blue. We can stain a protein that is being folded in green, and we can look at where they sit and what they do under different conditions.

"Now you can see if the protein is in its normal function or sequence. If it is mutated, does it go to a different place? Now we can see it sitting with the chaperone. And where are all the commands coming from? The nucleus? The chaperones?

Seeing the machinery of life close up is completely mind-blowing, says Adrienne.

Does it ever affect her daily life, being so acutely aware of the astonishing processes that are happening all the time in her body and everybody else's?

Not really, she says.

"But I can tell you that I find it absolutely impossible to kill anything like an ant or a spider or a snail. My husband and I are not really fans of spiders and whatnot, so we are working on a bucket-on-a pole prototype to remove them and put them outside.

"I mean, it's pathetic, but when I think of the complexity to make that ant, how everything has to work so perfectly together and all that kind of stuff, I just can't destroy it. So ants, go ahead. Enjoy the cake on my kitchen counter."

- Julianne du Toit



SARCHI Chair in Global Change and Social Learning Systems

Distinguished Professor Heila Lotz-Sisitka
Environmental Learning Research Centre



ELRC Staff and Scholars with Professor Heila Lotz-Sisitka at the Environmental Learning Research Centre.

From left to right (front row): Mvuselelo Frans, Samantha Abdul, Anelisiwe Manyatsi, Professor Heila Lotz-Sisitka, Dr John Bhurekani and Phindile Sithole. From left to right (back row): Athi Thabalaza, Maletje Mponwana, Dr Arorisoe Sibanda and Lazola Pendu.

Changing the World

The planet is experiencing climate change shifts and deteriorating ecological functions. Humans are disconnected from Nature, struggling with ill health, financial inequality and social ills. People like **Distinguished Professor Heila Lotz-Sisitka**, SARCHI Chair in Global Change and Social Learning Systems, are working on the solutions.

"If we are going to survive as a species on this planet, then education must be leading the way to help young people think about themselves and their relations in the world," according to Professor Heila Lotz-Sisitka.

Heila, of Rhodes University's Environmental Learning Research Centre, was appointed as SARCHI Chair in Global Change and Social Learning Systems in 2016.

"The Chair challenges us to look at where the boundaries must be transgressed if we really want to bring about change. We are building a whole new societal imaginary in which education is the interface between people and the environment. It is what connects people to the world."

"That why I love this field so much. There is a multi-dimensional complexity to it. And it is innovative."



Photo: Chris Marais.

Half the World's Youth

Never was innovation more urgently needed. The most worrying statistic in South Africa is the number of young people without work - up to 60%.

"But it's not only in South Africa," Heila points out. "It's across the African continent that we find between 60 to 70% of young people who are not in work, not in education, and not in training.

"By 2050, half the world's young people will be African. So the challenge for education is huge. That is why we need more imagination, to think about work for young people. And we must couple the work and learning opportunities to the green economy, just energy transitions, and viable jobs for the future.

"Because you can't just say, oh we've got 60% unemployment and there's nothing for young people to do so we're just going to leave it at that. You cannot. It's a travesty. It's a human rights and social justice issue. Hence we need more imagination, another social imaginary. We need to think out the box."

Just Give Them a Chance

"Research shows that if young people don't ever get an opportunity to work, even part-time work, they're much less likely to find more secure employment. So, as much as work is important, learning to work is equally important. Learning to work exposes young people to communities of practice, and to new experiences such as working with others to achieve a common goal. These are important life skills.

"So how do we create more opportunities for work? Of course, there is no shortage of work. Our rivers are heavily polluted, yet we lack monitoring capacity in this country. River monitoring could be a viable form of work for young people, if we can establish the institutional structures to support it. Creating more such viable learning and work pathways for youth requires co-ordinated responses across the economic, social development and skills system".

"We also need to manage our way out of the energy conundrum we're in, which is massive, and has huge implications for this country. It's only that the institutional structures haven't made it work. Or at least, not yet."

Green Jobs for Young People

How can the growing needs for a green economy and just transitioning of the energy sector spur job growth among the young people who need it most?

"We can create new work streams for young people that are linked to the energy transition to renewables, especially in small-scale solar, as the rooftop revolution is beginning to show. There is also great potential in responding to food security issues in communities through small scale agro-ecology activities. In the mining sector alone, we have 6,000 ha of degraded land that can be restored.

"There is also more potential for work in the recycling industry, with a new emerging arena for skills development opening up around second chance batteries, and the responsible recycling of solar energy and new energy vehicle waste. All of these require similar responsible practices to that of e-waste management. All of these offer potentially new 'learn to earn'

opportunities, but must be institutionally established and supported.”

Formalising and recognising the work being done in community-based water quality monitoring is a generally neglected area of work in climate change adaptation and resilience. This is especially so in the context of our water-scarce country, where all water resources are allocated, according to Heila.

Enter the Enviro Champs

South Africa is currently losing up to 32% of economically productive water through water leaks, and wastewater treatment plants are leaking effluent into the rivers, creating a national pollution disaster with 46% of the country’s water supplies being contaminated (2023 Blue Drop Report).

“This shows the crucial nature of the work of community-based water quality monitoring (CBWQM) practitioners. Such work becomes crucial to support both communities and municipalities to help monitor and manage water quality in South Africa.

“So, there is a big work stream in water and water quality monitoring that is not yet integrated into the national system of skills development.

“We cannot emphasise enough how important skills development and proper planning are for young people to come into these work pathways. Our research also shows that with this kind of work, young people are making contributions into their communities.

“And they enjoy that. It strengthens their identity, self-worth and a sense of doing something that matters, of making a contribution, however small. We call them Enviro Champs.”

The Just Transition

Sustainability scientists have pointed out that the rapid rate of non-linear environmental changes, and accompanying social changes are ‘out of sync’. Usually, humans would adapt over generations, but there is no time.

The cultural and value changes needed must now happen within a generation.

This requires new ways of learning. It may seem impossible, but ‘Just Transitions’ if they are to be democratic and inclusive, need people’s participation and meaning-making in and across diverse communities.

For this to happen, methodology development, transgressive learning and meaningful skills development are needed.

Part of the SARChI Chair’s research programme seeks to advance skills development for these climate resilient development pathways in South Africa.

“Our emphasis is on work streams accessible to those most marginalised in the Just Transition in the first instance. Since South Africa has progressive policy on the Just Transition and many interventions unfolding, the time to do this work is now.”

“Overall, our intention is to strengthen skills system responsiveness to advance inclusion in the Just Transition at the intermediate skill level, and through this, to strengthen the capability of the skills system to respond to youth unemployment and exclusion.”

Work for the Common Good

One of the great advantages of her SARChI Chair is its ability to link promising projects and programmes, says Heila.

“So we’ve been working quite a bit with the NGO sector, especially the Duzi uMngeni Conservation Trust (DUCT) and the Presidential Employment Stimulus (PES) to fund these new forms of work. Together with UNICEF, we are building innovative Learn for the Future programmes attached to these workstreams, so that young people can work for the common good, and learn for the future, and get recognition for that.

“It has been quite cool, because we’ve been able to work on the project with citizen science water quality monitoring up in KZN, all with young people.”

There have been three waves of intakes, 1 000 at a time, where the candidates are employed part-time for a stipend that correlates to the minimum wage.

The Just Energy Transition (JET) offers more opportunities.

“There is money coming in now for the Just Energy Transition, and everything is poised to make the big shift, to make sure that as coal reduces its influence in the energy system, and as renewables rise in importance, there are alternative livelihood pathways for those working in the coal value chain.”

System-Wide Impact

“You need to have the pathways ready, and basically get involved in reskilling people. We have been working with stakeholders involved in skills development and the Just Transition, to say, if we’re going to do this, let’s do it carefully so that it will have a system-wide impact. Let’s not just run a few training programmes.

“Let’s rather make the skills system more capable of continuing this work over time. That’s the direction we’ve been taking together with our main partner at the Wits Centre for Researching Education and Labour. And, our emphasis is on working out how to bring the youth of this country into the Just Transition in meaningful ways.

“To conceptualise some of the workstreams, we have been working with young people involved in local food systems development in Makhanda and the rural Eastern Cape, and we are building networks with young people working on circular economy innovations.”

The Nuts and Bolts of Global Change

Educating the youth while imagining a better world is electrifying, exhilarating and incredibly daunting.

“For this to work, we have to shift policy systems, nationally, regionally and internationally. We have to engage the whole multi-level space.”

Research and action must be wide-ranging, yet focus on linking small communities of practice and knowledge hubs, with the aim of scaling up useful knowledge and models.

It means holding hands with other countries and regions.

“For example, the UK has provided funding for the Global Challenges Research Fund, which allowed us to implement a Transforming Education for Sustainable Futures research programme with Bristol University in the UK and sister hubs in South Africa, Rwanda, Somalia and India. Despite Covid’s global shutdown, around 68 research projects were funded through the four country hubs.

“Because community-orientated learning is generally poorly funded, the South Africa hub opted to focus on communities and small social movements, to support their learning, and research their learning.”

“We were working with Makana youth, rural communities in KZN, social movements in Cape Town, and the fisherwomen of the West Coast and a youth-led climate movement in Cape Town, amongst others. Issues addressed by these groups ranged from water insecurity, climate justice, gender issues, oil and gas prospecting and loss of support for the fishery system.”

Engaged Research

“This is engaged research which means it’s not just about researchers going in, structuring information and then sitting in their offices doing the analysis and writing it up.

“It’s actually working with people to collaboratively generate insight into local matters of concern, and with them, to reflect on their concerns, work out capabilities and put alternatives in place.

“Through this, we have been developing methods for an engaged approach to the learning sciences in times of sustainability where it is important to not only learn facts about the problems, but to also collaboratively work out how to respond to these at all levels of the system.”

Teacher Education Online in SADC

Another major project that Heila and the ELRC have been working on is the teacher education system across SADC.

“We worked with the UNESCO Regional Office for Southern Africa in Harare and teacher educators in eleven (11) different countries (Botswana, Namibia, Eswatini, Lesotho, Zimbabwe, Zambia, Mozambique, Angola, Malawi, Angola and Tanzania), to integrate environment and sustainability into their tertiary education systems.”

It was supposed to be a very interactive programme where people went back and forth and learned from each other.

“But then that all just collapsed with Covid, so we had to redesign the whole programme and work out how to do the same thing, with the same impact, but through an online system.

“Actually it worked really well. We ended up with about 140 Change Projects in each of the institutions. We also learned a lot about online study. We looked at the mechanisms and modalities, and came up with the idea of e-learning ecosystems - the fact that you need a whole range of different approaches to make an e-learning process actually work properly.

“We had a great success rate, actually, because with most online learning internationally, completion levels are low - at about 15%. But we ended up with nearly 70% completion in the eleven (11) SADC countries. And this, even though many of them struggle more than we do with availability of power and data. And one year we did everything in Portuguese.

“In Europe, you can sit there and your camera can be on the whole time on a Zoom platform. Here, it doesn’t work. Data costs are too high, and the networks keep breaking down, it’s hard. So we actually ended up with a model of working online and then with various PDFs. We got data-free systems set up wherever we could, and then we had to design everything so it was on computer and smartphone, using WhatsApp groups as backup systems. It’s quite complex in our context to do e-learning properly.”

Future Earth

One of the most useful and exciting new platforms associated with the Chair is the Future Earth Africa Hub Leadership Centre, co-hosted in South Africa by Rhodes University and the University of Pretoria. The Future Earth Africa Hub is one of nine such hubs, linking a global network of researchers, scientists and innovators. The mission? To advance research in support of transformation towards global sustainability.

At Rhodes University, the hub encompasses the ELRC as well as the Institute for Water Research (IWR) and is being led out of the Institute for Social and Economic Research (ISER).

The SARChI Chair is developing a science cluster in the Future Earth Africa Hub Leadership Centre focussing on African Youth Futures and Sustainability.

Visions from a Youthful World

According to Professor Lotz-Sisitka: “We believe that there is a deficit discourse that dominates dialogues on ‘African youth futures’, and this comes with a lot of statistics of youth challenges, including unemployment.

“Building on the work of our leading scholar and researcher in the Chair, Dr Injairu Kulundu-Bolus, this cluster wants to work with young people to articulate their rising cultures and visions of the world, to centre and hear their stories and the work they are already doing and to better understand their agency for change.

“We are particularly interested in understanding how they are catalysing this agency to form and build relationships among themselves and with different partners within different contexts.

“This cluster is about how young people are using their agency and creativity to redefine their relationships with work, family, the state and the environment, because none of those structures is serving them particularly well.

“There’s a need to better understand this space, and the important thing we want to do is rethink the discourses people use to describe young people, but also to work pro-actively with them on alternative futures, such as in relation to the workstreams project mentioned above.”

Seeds are Being Planted

If you ever need an infusion of hope, it can be found in the fizzing energy and commitment among Heila’s students at the Environmental Learning Research Centre.

“This is a values-driven field, and people become passionate about it. That’s why they tend to stay within it. I have personally supervised more than 130 Masters and PhDs. It is such a stimulating field because it is so complex and because we are learning all the time, so there are constantly new concepts in circulation.

“This centre is a leading seedbank for environmental education. There are not many programmes in the world that have such a critical mass and dynamism.”

The Engine of Transformation

Some people confuse what Heila is doing with Community Engagement and outreach.

“But what I’m actually doing is social learning research, seeing how new emerging learning processes work, and what learning processes are needed in order to bring about the kinds of social change that we need, how to mobilise social learning for environmental action. To deal with environmental and social justice challenges, one needs collective approaches to learning. So that is what most of my PhDs are studying, how such learning processes can be constituted, how they work, how to establish them in learning institutions, and how to evaluate them.

“Social learning is a bit of a catchphrase. But when you look into it, there’s a very strong scientific basis for learning as a social practice. Learning is always a socio-cultural practice, because it is always interactive. It involves mobilising language and culture.

“And when you work on transformative social learning, you’re actually working on transforming those practices, transforming cultures through learning, and through what we’re able to learn. So that’s really what we do here.

“For example, I’ve got a PhD candidate now who is working on understanding the learning experiences of the Enviro Champs, and also what their aspirations are for learning so that we can co-design better learning pathways for them into emerging and viable workstreams, and then see how those can be accredited.

“This is the engine of transformation, we need to understand how change becomes possible through our engagements with people. Change is not just something ‘dropped from above’, it is always co-created by people, who often need to learn how to bring about such changes. This is the scope of the challenge in a rapidly changing world.”

- Julianne du Toit

A photograph of a paved walkway lined with large, leafy trees and a stone wall on the left. Several people are walking away from the camera. The text 'RHODES UNIVERSITY' is overlaid in white, sans-serif font.

RHODES UNIVERSITY

DEPARTMENTS

RHODES UNIVERSITY

Centre for Higher Education Research, Teaching and Learning (CHERTL)



Associate Professor Jo-Anne Vorster
Head of Department

Introduction

The Centre for Higher Education Research, Teaching and Learning (CHERTL) contributes to the academic project of Rhodes University through offering a range of staff and student development programmes. In addition, CHERTL staff supervise Postgraduate scholars whose projects focus on critical issues in the field of Higher Education Studies. Centre staff conduct research in the fields of academic staff development, educational technologies, knowledge in the curriculum, social justice in higher education, student access to knowledge practices in higher education, and Doctoral education.

Postgraduates / Graduations

Doctoral graduations:

Dr Ruth Andrews: *The morphogenesis of higher education leadership a social realist exploratory journey.*

Dr Emily Mabote: *Mechanisms conditioning the implementation of an integrated quality assurance and enhancement approach at a South African University of Technology.*

Dr Mazvita Thondlana: *The Nexus between Community Engagement and Academic Language Development.*

Postgraduate Diploma in Higher Education (PGDip (HE):

In 2023, thirty (30) academics completed the PGDip (HE) successfully. Twenty-eight (28) academics completed the course for Lecturers (seven (7) from Rhodes University and twenty-one (21) from other South African universities), with five (5) academics obtaining distinctions. Two (2) candidates completed the course for academic developers.



Front row, from left to right:
Professor Sioux McKenna, Dr Anthea Adams, Professor Jo-Anne Vorster and Ms Kelly Solomon.

Back row, from left to right:
Professor Lynn Quinn, Dr Karen Ellery and Dr Kirstin Wilmot.
CHERTL graduation celebration.

Photo: CHERTL.

CHERTL staff conduct research in the fields of academic staff development, educational technologies, knowledge in the curriculum, social justice in higher education, student access to knowledge practices in higher education, and Doctoral education.

Distinguished Visitors / International Visits

CHERTL hosted three distinguished scholars over the course of 2023 who participated in our triannual 'Doc Weeks'. Scholars included Professor Stephanie Burton (University of Pretoria), Professor Gary Barkhuizen (Auckland University, NZ), and Professor Zethu Matebeni (University of Fort Hare).

Significant Research Aligned Events

CHERTL continues to host three Doc Weeks per year. In March 2023, we explored the notion of positioning studies within the broader field of higher education studies. We were joined by Professor Paul Ashwin (online) for inputs on this topic, as well as in-person by our new **Senior Research Associate, Professoer Kathy Luckett**. The June Doc Week was held online and in-person and consisted of a series of practical workshops on how to write the Doctoral thesis. In September 2023 we hosted Professor Gary Barkhuizen and Professor Zethu Matebeni who explored the complexity of narrative inquiry and intersectionality theory.

Based on the success of previous project teams within the broader Doctoral programme, in 2023 CHERTL launched a structured Doctoral programme as their mainstream offering. The structured programme attends to calls in literature for more curriculated and structured Doctoral programmes, despite coursework still not being recognised for credit in South Africa. The structured programme consists of six (6) modules which supervisors facilitate online, and which PhD candidates and Pre-Doctoral candidates complete over the course of their first year. Each module has an associated assignment on which assigned supervisors provide formative feedback. On-going feedback on the new mode has been positive to date.

Research activities - Associate Professor Mags Blackie

Transdisciplinarity research - Mags Blackie presented several talks on transdisciplinarity including an invited talk at Nelson Mandela University and a SAERA conference talk. She was invited to give a talk at the TRANSECTS indaba held at Assegai Trails and was then invited to join the research team as a collaborator.

Higher education research - Mags Blackie was invited to give a talk at the renown CRADLE Institute at Deakin University in Melbourne. This opportunity was part of a trip to Australia to consolidate a research collaboration with Robyn Yucel, also at Deakin University. On this trip she also presented a paper at the HERDSA conference in Brisbane. Mags Blackie also participated in a 3 day workshop at Lancaster University led by Paul Ashwin to conclude the seven year longitudinal study comprising the 'Understanding Knowledge and Student Agency' and 'Graduate Experiences of Employability and Knowledge'. This workshop included researchers from England, the United States and South Africa. She also presented this work at Sheffield University. She also presented on this work as a keynote presentation at the SACI convention in Stellenbosch.

Critical realism - Mags Blackie was an invited speaker at the IACR conference held in Manila in August 2023 talking on critical realism and science. The work she has done in this area was also recognised through an invitation to write a commentary for Nature Chemistry, an invitation to present at the University of Pretoria Senate Conference, and several follow up workshops around the country.

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Murris, K. and **Bozalek, V.** (2023). Introduction: Glimpsing the Colours on the Palette: " " " Slowing Down Together/ Apart. In **K.** Murris, K. & **V. Bozalek** (eds.). In *conversation with Karen Barad: Doings of agential realism*. London & New York: Routledge. p.1-20. ISBN: 9781032253831.

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Pallitt, N.M. and Kramm, N.
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Staff and student participants in Doc Week. *Back row:* Kristin Wilmot, Nicola Pallitt (visitor), Olebogeng Mokgantsang, Kelly Vorster, Cosmas John Kathumba, Sam Jere, Gary Barkhuizen, Grant Cyster, Mamotena Mpeti, Ingrid Baigrie and Martha Sambani. *Front row:* Warda Abrahams, Judith Reynolds and Mags Blackie. Photo: CHERTL.

Wilmot, K.

Wilmot, K. and McKenna, S. (2023) Collaboration, collegiality, and commitment: Cultivating critical hope in a doctoral programme. In: Samuel, M.A. and Mariaye, H. (eds.). *Transforming Postgraduate Education in Africa*. Pietermaritzburg: CSSALL Publishers (Pty) Ltd. p.33-56. ISBN: 9780986993732.

Peer Reviewed Non-Subsidy-Earning Journal Research Publications

Pallitt, N.M.

Gachago, D., Bali, M. and Pallitt, N.M. (2023) Changing from Within: Narratives of Resistance from Equity-Oriented Learning Designers. *The Journal of Applied Instructional Design (JAID)*. 12 (2). p.1-11.

Peer Reviewed Subsidy-Earning Journal Research Publications

Blackie, M.A.L.

Blackie, M.A.L. (2023) Implications of a critical realism approach to chemistry research and education. *Nature Chemistry*. 15 (8). p.1047-1050.

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Ashwin, P., Blackie, M.A.L., Pitterson, N. and Smit, R. Undergraduate students' knowledge outcomes and how these relate to their educational experiences: a longitudinal study of chemistry in two countries. *Higher Education*. 2023, 86 (5), 1065-1080

Bozalek, V.G.

Bozalek, V.G. (2023) Ethological Propositions for Curriculum Studies in Higher Education. *South African Journal of Higher Education*. 37 (5). p.43-59.

Kuby, C.R. and Bozalek, V.G. (2023) Editorial: Post Philosophies and the Doing of Inquiry: Webinars and WEBing Sessions Become a Special Issue(s). *Qualitative Inquiry*. 29 (1). p.3-6.

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Newfield, D., Bozalek, V.G. and Romano, N. (2023) Doing Concepts Differently. *SOTL in the South*. 7 (1). p.168-189.

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Shefer, T., Zembylas, M. and Bozalek, V.G. (2023) Re-viewing Peer Reviewing: Towards an Affirmative Scholarship. *SOTL in the South*. 7 (1). p.147-167.

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Bozalek, V.G. and Zembylas, M. (2023) Response-Ability. *Palgrave Critical University Studies*. 1194 (2023). p.63-81.

Bozalek, V.G. and Zembylas, M. (2023) Ecological Catastrophe. *Palgrave Critical University Studies*. 1194 (2023). p.107-127.

Bozalek, V.G. and Zembylas, M. (2023) Coloniality. *Palgrave Critical University Studies*. 1194 (2023). p.83-106.

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Guzmán-Valenzuela, C., Chiappa, R., Rojas-Murphy Tagle, A., Ismail, N. and Pedraja-Rejas, L. (2023) Investigating critical thinking in higher education in Latin America: Acknowledging an epistemic disjuncture. *Critical Studies In Teaching and Learning (CriSTaL)*. 11 (2023). p.1-29.

Chiappa, R. (2023). ¿Cuán profesionalizados están los procesos de contratación académica en las universidades chilenas?. *Calidad de la educación*, 58, 268-369. doi: <http://dx.doi.org/10.31619/caledu.n58.1290>

Chiappa, R. (2023) Unpacking (un)conscious social class bias in faculty hiring processes in Chile: PhD prestige granting university and network. *Higher Education Quarterly*. 77 (4). p.756-773.

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Dana, Z. (2023) War, Women and Post-conflict Empowerment: Lessons from Sierra Leone. *African Journal on Conflict Resolution*. 23 (2). p.1-10.

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Knowles, C.R., Babeli, N.Q.E., Ntlokwana, A., Ntombolwana, Z.Q. and Sobuza, Z.Z. (2023) The politics of knowledge in South African universities: Students' perspectives. *Transformation in Higher Education*. 8 (2023). p.1-9.

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Ziervogel, G. and Pallitt, N.M. (2023) Student-Created Videos of Climate Change Vulnerability: Opportunity for connection and care. *Southern African Journal of Environmental Education*. 38 (2022). p.61-76.

Tshuma, N. and Pallitt, N.M. (2023) Technology, time and communication: Exploring postgraduate students' experiences of online supervision during the pandemic. *Journal for New Generation Sciences*. 21 (1). p.159-170.

Gachago, D., Bali, M. and Pallitt, N.M. (2023) Equity-Oriented Learning Design: An Entangled Future. *Postdigital Science and Education*. 2023 (2023). p.173-193.

Pallitt, N.M. and Kramm, N.

Pallitt, N.M. and Kramm, N. (2023) Beyond A 'Noticing Stance': Reflecting to Expand Postdigital Positionalities. *Postdigital Science and Education*. 2023 (2023). p.23-38.

Wilmot, K.

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Kramm, N. and Blackie, M.A.L.

Kramm, N. and Blackie, M.A.L. AI disruptor or catalyst for rethinking assessment. *International mLearn/iTLT Conference*. The Capital Pearls, Umhlanga. South Africa. October 2023.

RHODES UNIVERSITY

Centre for Postgraduate Studies (CPGS)



Professor Sioux McKenna
Director

Introduction

The *Umkhombandlela*, Rhodes University's Institutional Development Plan, sets out goals for the period 2023 to 2028. This document makes clear the important role being played by the Centre for Postgraduate Studies in strengthening the institution's contribution to knowledge through research and Postgraduate education. Goal 4 includes the university's commitment to *"Strengthen the position and profile of the Centre for Postgraduate Studies as a focal point for Postgraduate and Post-Doctoral life and support services"*.

The centre works across all faculties to support Postgraduate scholars, supervisors, Postdoctoral Fellows, and emerging researchers. The centre's activities are largely funded through the Department of Higher Education and Training's University Capacity Development Grant (UCDG) and include workshops, accredited short courses, writing retreats and writing groups, and the annual Postgraduate conference. The centre focuses on nurturing a research rich environment which takes seriously our commitment to transformation, sustainability, local relevance, and global impact.

Distinguished Visitors / International Visits

Professor Elke Stracke, Associate Dean from University of Canberra, was a guest of the Centre for Postgraduate Studies in May 2023. She offered a public lecture and a number of workshops for Postgraduate scholars.

In June 2023, PhD scholar and CPGS staff member, **Asiphe Mxalisa**, received a scholarship to attend the Doctoral school at Boston College after which she attended the Center for International Higher Education's conference where **Professor Sioux McKenna** was an invited speaker.

Also, in June 2023, CPGS administrator, **Siphokazi Mankayi**, and **Sinazo Peters** from the Research Office attended a research management mobility exchange at Vrije Universiteit in Amsterdam as part of the *Creating Postgraduate Collaborations* project led by **Sioux McKenna**. This project also included a trip to Mombasa in September 2023, where Siphokazi Mankayi and Sioux McKenna, along with a team of colleagues from Rhodes University attended a grant writing workshop in Mombasa. Following this they, along with Asiphe Mxalisa also from CPGS and a team of Rhodes University colleagues, attended a colloquium in Nairobi in November 2023. This was the final colloquium of the EU-funded *Creating Postgraduate Collaborations* project. As part of this project, Sioux McKenna and Postdoctoral Fellow, **Mazvita Thondhlana**, ran workshops on academic writing for postdocs at Maseno University, South East Kenya University, and Moi University, all in Kenya.

Significant Research Aligned Events

Sioux McKenna was also awarded the Rhodes University Internationalisation Award in recognition of her work across borders, through coordinating student and staff mobility grants, managing large international projects, and contributing to higher education in various countries in Africa and beyond.



CPGS focuses on nurturing a research rich environment which takes seriously our commitment to transformation, sustainability, local relevance, and global impact.



Top left: Sonia Namukuta and top right: Takudzwa Makuwa, receiving awards from Professor Sioux McKenna.

Photos: CHERTL

Centre for Postgraduate Studies (CPGS)

Books/Chapters/Monographs

McKenna, S.

Wilmot, K. and McKenna, S. (2023) Collaboration, collegiality, and commitment: Cultivating critical hope in a doctoral programme. In: Samuel, M.A. and Mariaye, H. (eds.). *Transforming Postgraduate Education in Africa*. Pietermaritzburg: CSSALL Publishers (Pty) Ltd. p.33-56. ISBN: 9780986993732.

Other Publications

McKenna, S.

McKenna, S. and Langa, P. (2023) Paying for publications is at odds with knowledge creation. In: *University Worlds News*. SA: University Worlds News.

McKenna, S. and Motshoane, P. (2023) Five characteristics of effective supervisor training. In: *Times Higher Education*. SA: Times Higher Education.

McKenna, S. (2023) Opting out of the rankings game in Sub-Saharan Africa. In: *University World News*. SA: University Worlds News.

McKenna, S., Dixon, D., Oppenheimer, D., Blackie, M.A.L. and Illingworth, S. (2023) ChatGPT is the push higher education needs to rethink assessment? In: *The Conversation*. South Africa: The Conversation.

McKenna, S. (2023) As NSFAS funding balloons, higher education budget cuts will strangle SA severely in the long term. In: *Daily Maverick*. South Africa: Daily Maverick.

McKenna, S. (2023) Budget cuts? HE funding is moving in the wrong direction. In: *University World News*. SA: University World News.

Peer Reviewed Subsidy-Earning Journal Research Publications

McKenna, S.

McKenna, S. and Van Schalkwyk, S. (2023) A scoping review of the changing landscape of doctoral education. *Compare*. 1 (1). p.1-10.

Homateni, J.K., McKenna, S. and Mgqwashu, E. (2023) The conflation of English competence and academic literacy: A case study of three Namibian universities. *Innovations in Education and Teaching International*. 2023 (2023). p.1-14.

Kramm, N. and McKenna, S. (2023) AI amplifies the tough question: What is higher education really for? *Teaching in Higher Education*. 28 (8). p.2173-2178.

McKenna, S. and Boughey, C.

McKenna, S. and Boughey, C. (2023) Creating knowledge and knowers in the undergraduate curriculum. *African Journal of Inter/Multidisciplinary Studies*. 4 (1). p.4-13.

McKenna, S. and Muthama, E.

McKenna, S. and Muthama, E. (2023) The Whole is Greater than the Sum of its Parts: A Case Study of the Nexuses between Teaching, Research and Service. *HERD*. 1 (1). p.1-15.

Book Reviews

Mxalisa, A.

Mapaling, C., and Mxalisa, A. (2023). Book review: Higher education hauntologies: Living with ghosts for a justice-to-come, edited by Vivienne Bozalek, Michalinos Zembylas, Siddique Motala and Dorothee Hölscher. *Scholarship of Teaching and Learning in the South*.

Mapaling, C., and Mxalisa, A. (2023). Book review: Contextualised critical reflections on academic development practices: Towards professional learning, edited by Teboho Pitso. *Scholarship of Teaching and Learning in the South*.

Research Papers Presented at Academic/Scientific Conferences (Non-peer-reviewed Proceedings)

Boughey, C.

Boughey, C. and Grosch, E.G. Affirming Student Identities. *International Higher Education Conference: Developing Faculty Members' Pedagogical Acuity*. University of Crete, Rethymnon. Greece. September 2023.

McKenna, S.

McKenna, S. The pitfalls of AI (Invited speaker). *United Nations Science Summit*. Online, Makhanda. SA. September 2023.

McKenna, S. AI spells the end of instrumentalist higher education (Invited speaker). *Cogitait*. Online, Makhanda. SA. April 2023.

McKenna, S. Change, Rankings, and Looking forwards (Invited speaker). *Reimagining Higher Education*. University of Free State, Free State. SA. October 2023.

McKenna, S. The metrification of academic publishing (Invited speaker). *Heltasa (un)conference*. North West University, North West University. SA. October 2023.

Mxalisa, A.

Mxalisa, A. Intersectional Narratives Of Students At Eastern Cape Universities In South Africa Post #Mustfall Movements And During/After Covid-19. *The 2023 Wes-CIHE Summer Institute Conference On "Power And Equity In International Higher Education"*. Boston College, USA. June 2023.

Mxalisa, A. Exploring the experiences of female students in Eastern Cape universities: *Siphefumla Ngamanxeba!* (We are enduring the pain of GBV) - an intersectional perspective on suffering and living in fear. *Transformation Conference*. University of South Africa. SA. October 2023.

Mxalisa, A., Tau, S. and Juglal, S. Gender, Activism, and Resistance. *African Humanities Association Conference*. University of Cape town. SA. November 2023.

Mxalisa, A. and McKenna, S.

Mxalisa, A. Kirstin, W. and McKenna, S. Racial Dynamics in Identity Construction: An Intersectional Study on the University as a Social and Physical Space. *ACUS Africa Conference*. University of Ghana. Ghana. October 2023.

RHODES UNIVERSITY

Community Engagement



Diana Hornby
Director

Introduction

There is still an urgent need for more inclusive approaches to knowledge creation if knowledge is for the purpose of social and epistemic justice, leading to sustainable change. Approaches that are inclusive should embrace and recognise all forms of knowledge, including indigenous ways of knowing. The devaluing of “other” knowledge systems creates a chasm between communities and those perceived as knowledge holders in that it alienates rather than builds bridges. Engaged research is becoming increasingly significant as it emphasises collaboration and the co-creation of knowledge incorporating indigenous knowledge and the knowledge of local communities. The importance of engaged research is evidenced by the establishment of twenty-five (25) Knowledge for Change (K4C) hubs in 16 countries by the UNESCO K4C International Consortium.

This report focuses on engaged research and related activities and programmes by RUCE (Rhodes University Community Engagement) for the period January to December 2023. From accredited courses and international conferences to ethical considerations, collaborative dialogues, and the launch of a groundbreaking academic journal, the report highlights RUCE’s steadfast commitment to inclusive, collaborative, and ethically driven research practices aimed toward advancing knowledge democracy and enhancing community engagement.

Rhodes University accredited Engaged Research Short Course

Twenty-four (24) participants attended the Engaged Research short course in 2023 and comprised of a Postgraduate student



Award winning, RU Flagship programme: Nine Tenths Mentoring between RU Mentors and Learner Mentees in five (5) High Schools in Makhanda.

Photo: RUCE.

The diverse representation across various fields within Rhodes University highlights the inclusive and collaborative spirit fostered within the programme.

from Environmental Science, eighteen (18) Rhodes University academic staff, three (3) Rhodes University support staff and two (2) community development practitioners. The participants represented a diverse number of departments, organisations and areas of expertise, showcasing the transdisciplinary nature of the Engaged Research programme. These included Zoology and Entomology, Grounds and Garden with a specialization in Quantity Surveying, Journalism, isiXhosa Primary and Early Childhood education, the Registrars Division, Biotechnology, Statistics, Ubunye Foundation, Rhodes Music Radio, Human Kinetics and Ergonomics, Psychology, Environmental Science, Mathematics, Community Engagement, Water Research Institute, Biochemistry and Microbiology, SAIAB, Centre for Biological Control, Journalism and Media Studies and Inkululeko. This diverse representation across various fields highlights the inclusive and collaborative spirit fostered within the programme.

Postgraduate Supervision and Graduation

Dr Rene Oosthuizen co-supervised **Emma Chapman** in MSc in Pharmacy and Emma graduated in October 2023. **Dr Joanna Bezerra** and **Dr Sharli Paphitis** supervised **Theodore Duxbury** in his PhD (Pharmacy) and who also graduated in October 2023.

Engaged Research Community of Practise (CoP)

The Rhodes University Engaged Research Community of Practise (CoP) established in 2022 was launched on 15 March 2023 with the aim of building and nurturing engaged research and providing a platform for academics, researchers, Postdoctoral Fellows and Postgraduate students to connect, collaborate and learn together. The CoP currently comprises six (6) members, including academics from Journalism,

Psychology, and the Water Research Institute. The launch involved a hybrid roundtable discussion reflecting on engaged research experiences and addressing the barriers or challenges that arise during the research process, as well as exploring potential solutions to overcome them. Distinguished guest speakers were **Distinguished Professor Catriona Macleod** and **Dr Margie Maistry**, who were invited to share their insights.

In Term 2, the roundtable was an integral part of the CE conference programme, focusing on the Scholarship of Engagement at various Global South universities. Facilitated by RUCE's Engaged Research coordinator, **Dr Oosthuizen**, the dialogue included esteemed participants Professor Budd Hall from Victoria University, Canada, a UNESCO co-chair in Community Based Research and Social Responsibility in Higher Education, and Professor George Openjuru, the Vice-Chancellor of Gulu University, Uganda. Notably, academics from the following South African universities: University of Pretoria, Rhodes University, University of Limpopo and Nelson Mandela University were also part of this engaging session reflecting on benefits and challenges related to the Scholarship of Engagement at their various universities.

In Term 3, the hybrid roundtable shifted its focus towards the ethical dimensions of engaged research. The discussion was enriched by the invaluable insights shared by two (2) eminent speakers, former Rhodes University DVC of Research and Innovation, **Professor Peter Clayton**, and **Dr Janet Hayward**, Chair of Rhodes University Ethics Committee. Their perspectives offered a deep insight into the ethical considerations intersecting with engaged research at Rhodes University, drawing from their extensive roles and experiences. These roundtable discussions provided a rich platform for exploring both the academic and ethical dimensions of engaged research.

Engaged Research Seminars

On 17 February 2023, a seminar on Engaged Research was offered to students enrolled in the PGDip in Journalism and Media Studies.

Dr Oosthuizen presented at a seminar for Postgraduate students from the University of Victoria, Canada on 14 March 2023. The seminar, which was part of the Knowledge Democracy module in the Faculty of Education's Department of Educational Psychology and Leadership Studies, focused on Engaged Research at Rhodes University, specifically highlighting the university's role as the K4C Southern Hub of the UNESCO K4C Consortium. On 18 December 2023, Dr Oosthuizen participated as a guest lecturer on ethics and building of partnerships for the UNESCO K4C Mentor training programme.

Other Engaged Research seminars that were facilitated in 2023 were at the Rhodes University Centre for Postgraduate Studies, the Integration of Disaster Risk Management into Integrated Development Planning for the Joe Gqabi District Municipality, and the Eastern Cape Provincial Disaster Management Advisory Forum.

The Engaged Scholarship Consortium International Conference: Michigan State University, USA

The Engaged Scholarship Consortium International Conference organised by Michigan State University was held in October 2023. Dr Oosthuizen, RUCE staff and Dr Margie Maistry, RUCE research associate, attended this conference and participated in two (2) different events that showcased RUCE's Engaged Research and Scholarship of Engagement activities. The conference was themed "Mobilizing Change through Engaged Scholarship," revolving around subthemes of mobilizing people, institutions and ideas. Panellists from Africa, Asia, South and North America, engaged in critical conversations about engaged scholarship globally, and presented diverse perspectives on universities' roles, social responsibilities, innovations in community engagement, and the generation of community-centric solutions.

As chief editor of the newly launched *African Journal for Higher Education Community Engagement* (AJHECE), Dr Maistry, participated in the higher education journal panel discussion led by journal editors involved in the publishing of community-engaged scholarship. This engagement aimed to emphasise the importance of Community-Based Participatory Research (CBPR) in realising community development and enhancing university engagement and relevance. Rhodes University was acknowledged and applauded for its pioneering effort in establishing the first journal on higher education community engagement for the African continent.

CBPR Collaborative Discussion

The Community Based Participatory Research (CBPR) Collaborative Discussion took place on 17 July 2023 at Rhodes



Visiting academic from Stellenbosch University, Dr Shantal Windvogel engaging Principal Radio Mcuba at Kuttiso Daniels around the impact of the Nine Tenths Programme during her visit to RUCE.

Photo: RUCE.

University. The meeting was attended by academics from various disciplines including Information Systems, Journalism, Anthropology, Rhodes University Mathematics Education Project (RUMEP), Pharmacy, Management, Economics and the Rhodes University Institute for Water Research. Community partner organisations representatives included the Ubunye Foundation, Assumption Development Centre (ADC) and the Learning Trust.

Human Research Ethics Committee

Presently, engaged research studies at Rhodes University follows a two-tiered submission process. First is the application for a scoping approval to initiate engagement with the community, and then the submission of the research proposal, which is informed by the community's participation and input. The Human Ethics Committee currently includes a community partner, Ms Monica Canca, who is one of the Engaged Research short course facilitators and serving as a member of the Human Ethics Committee. This kind of change in an institutional ethics structure for engaged research is the first of its kind in South African universities.

Community Engagement Conference

The Rhodes University Community Engagement Conference took place from 9 to 11 May 2023. The overarching theme of the conference was titled: *The Significance, Relevance and Impact of Higher Education Community Engagement for South Africa and the Continent*. Given that formalised CE is relatively new in the higher education arena, is still emerging as a discipline and presents challenges to many academics, the objective of the conference was to generate knowledge, both theoretical and practical, on the significance, relevance and impact of CE for higher education and its reimagined purposes.

The conference covered the themes of Engaged Citizenry and Community University Partnerships; Engaged Teaching and

Learning; Engaged Research; Social Innovation and Social Entrepreneurship. Ninety-seven (97) individuals attended in person and fifty-seven (57) virtually; twenty-two (22) national, one (1) private, and six (6) international universities were represented by the presentations. As a result of the large number of abstracts received, the presentation formats had to be varied as oral, poster, storytelling and workshop style presentations. The depth of content in the presentations pointed to CE coming of age in terms of critical analysis and knowledge creation. Concepts of note that were prevalent in several presentations included epistemic justice; epistemic deference; the cultivation of humanity; social justice; community access to university knowledge and critical service learning. A few presentations focused on the ethics of Community Engagement in practice and in research, and the legal and moral imperatives of both.

African Journal for Higher Education Community Engagement (AJHECE)

The first publication of the *African Journal of Higher Education Community Engagement* (AJHECE) was launched on 23

November 2023. Research papers were selected from presentations at the May Conference for the first publication and underwent a process of double-blind peer review. The Journal is hosted online by the Rhodes University Library. An *African Journal of Community Engagement* provides a space for African perspectives on the contribution of community engagement in higher education. This new journal intends to make a significant contribution not only to embedding community engagement as a university function but also to growing an African canon on community engagement and moving towards knowledge democracy.

<https://journal.ru.ac.za/index.php/AJHECE/>

Research Associates

Dr Margie Maistry, Dr Sharli Paphitis and Professor Katy Pepper, Research Associates, have demonstrated prolific scholarly output this year through their extensive and impactful publications.



HKE Postgraduate students involved in Engaged research and teaching in the Joza High Performance Centre.

Photos: RUCE.

UNESCO K4C Centre for CBPR Mentor Training

Rhodes University is the Southern Hub of the UNESCO K4C International Consortium. With eight cohorts launched since its inception in 2017, the UNESCO Consortium has established twenty-five (25) hubs in sixteen (16) countries, training one hundred and fifty (150) mentors through a comprehensive 21-week online and face-to-face 'training of trainers' Mentor Training Programme (MTP).

The online course focuses on establishing and enhancing hubs' capacity to integrate CBPR within their local contexts. In May 2022, during meetings in Barcelona with K4C Hub coordinators, higher education leaders and UNESCO colleagues, a decision was made to advance the K4C Consortium by regionalising its training programmes. The establishment of the UNESCO K4C African Centre for Community-Based Participatory Research (CBPR) located at Gulu University in Uganda focuses on enhancing and expanding the K4C network through collaborative initiatives with existing African hubs. Coordinated by existing African K4C hubs including Rhodes University, the Centre aims to strengthen partnerships, offer new training programmes and facilitate joint research initiatives. Central to this effort are annual residencies hosted by different hubs each year, providing affordable travel options, fostering cross-regional learning and promoting leadership roles for new hub members under the guidance of experienced mentors.

Recognising diverse training programmes within the K4C networks, the residency programme offers a platform for Mentor Training Programme (MTP) graduates to consolidate

their knowledge and expand the regional network. Emphasizing collaboration, student-centered learning, and experiential methods, the course accommodates diverse learning styles and language preferences. Self-reflection, discussions on development, ethics, and knowledge democracy precede the exploration of hub strategies, CBPR teaching, and the development of individual proposals. The residency further amplifies these elements, incorporating arts-based inquiry methods and allowing participants to engage in community-based research and present reflections. An advisory board, comprising the two UNESCO Chairs in Community-Based Research and Social Responsibility in Higher Education and representatives from Latin America and Malaysia Regional Training Centres, will provide strategic guidance to the African Regional K4C Centre.

Local K4C Hub at Rhodes University

In October 2023, RUCE established the physical local K4C Hub which is directly behind the Prince Alfred Street CE Office. The vision for the Hub is to create a vibrant and engaging space for academics, community partners and students in engaged research. RUCE looks forward to 2024 to make valuable use of the space for its intended purpose.

Self-reflection, discussions on development, ethics, and knowledge democracy precede the exploration of hub strategies, CBPR teaching, and the development of individual proposals.



Masonwabe Nduna and Di Hornby. Photo: Chris Marais.

Community Engagement

Books/Chapters/Monographs

Maistry, S.

Rautenbach, J.V., **Maistry, S.**, and Shokhane, A.L. (2023) Eds. *Introduction to Social Work (2nd Edition)*. Juta & Co. Cape Town. ISBN: 9781485131991.

Maistry, S. and **Magaiza, G.** (2023). Community Development. In: Rautenbach, J.V., Maistry, M., and Shokhane, A.L. (eds.). *Introduction to Social Work (2nd Edition)*. Juta & Co. Cape Town. ISBN: 9781485131991.

Lortan, D. and **Maistry, S.** (2023). Bridging the Knowledge Culture Gap between Early Childhood Development Practitioners and Academic Researchers: Experiences from the DUT K4C Hub, Durban, South Africa. In: Lepore, W., Hall, B.L., and Tandon, R. (eds.). *Bridging Knowledge Cultures: Rebalancing Power in the Co-Construction of Knowledge*. Brill. p.207-231. ISBN: 9789004687769.

Lortan, D., **Maistry, S.** and Grobbelaar, H. (2023). Promoting Knowledge Democracy: Disrupting from within. In: Chitanand, N. and Rathilal, S. (eds.). *Academic Staff Development: Disruptions, complexities and change (Envisioning new futures)*. Sun Press. p.151-170. ISBN: 9781991260352.

Peer Reviewed Subsidy-Earning Journal Research Publications

Maistry, S.

Sibhensana, B., and **Maistry, S.** (2023). "Conceptualising Public-Private Partnerships for Social Innovation through Community Engagement in Higher Education Institutions". *South African Journal of Higher Education*. 37 (1), p.185-205. <https://doi.org/10.20853/37-1-5669>.

Padayachee, K., **Maistry, S.**, Harris, G. and Lortan, D. (2023) Exploring the Value of the Indigenous Knowledge of Ubuntu in Early Childhood Education in South Africa. *Africa Education Review*. 2023 (2023). p.1-11. <https://doi.org/10.1080/18146627.2023.2243379>

Padayachee, K., **Maistry, S.**, Harris, G. and Lortan, D. (2023) Integral education and Ubuntu: A participatory action research project in South Africa. *South African Journal of Childhood Education (SAJCE)*. 13 (1). p.1-12. <https://doi.org/10.4102/sajce.v13i1.1298>

Matyobeni, T., and **Maistry, S.** (2023). "Promoting Engaged Scholarship Through Digital Storytelling: An Evaluation of Rhodes University Community Engagement Social Innovation Hub". *Journal for New Generation Sciences (JNGS)*. 1:21(2):49-60. <https://doi.org/10.47588/jngs.2022.20.02>.

Chapman, E.C. and **Oosthuizen, R.C.**

Chapman, E.C. and **Oosthuizen, R.C.** (2023) The COVID-19 response and accountability in South Africa. *Journal of Emergency Management*. 21 (8). p.1-11.

Paphitis, S.A.

Jannesari, S., Damara, B., Witkin, R., Katona, C., **Paphitis, S.A.** and *et al.* (2023) The Modern Slavery Core Outcome Set: A Survivor-Driven Consensus on Priority Outcomes for Recovery, Wellbeing, and Reintegration. *Trauma, Violence and Abuse*. 10 (2023). p.1-13.

Mukerji, R., Saboor, L., **Paphitis, S.A.**, Devakumar, D. and Mannell, J. (2023) How does domestic violence stigma manifest in women's lives in Afghanistan? A study of survivors' lived experiences of help seeking across three Provinces. *Global Public Health*. 18 (1) p.1-18.

Kaul, A., Chavendera, D.D., Saunders, K. and **Paphitis, S.A.** (2023) Improving Emotional Safety, Coping, and Resilience among Women Conducting Research on Sexual and Domestic Violence and Abuse. *Journal of Interpersonal Violence*. 1 (1). p.1-24.

Pepper, K.

Pepper, K. (2023) 'If I don't take my treatment, I will die and who will take care of my child?': An investigation into an inclusive community-led approach to addressing the barriers to HIV treatment adherence by postpartum women living with HIV. *PLoS ONE*. 18 (4). p.1-11.

Sibhensana, B. and **Maistry, S.**

Sibhensana, B. and **Maistry, S.** (2023) Conceptualising public-private

partnerships for social innovation through community engagement in higher education institutions. *South African Journal of Higher Education*. 37 (1). p.185-205.

Talbot, A.L.P. and **McCann, C.M.**

Talbot, A.L.P. and **McCann, C.M.** (2023) Conceptualisation and experiences of engaged citizenship as critical consciousness, transformative education and mutual joy: An autoethnography. *South African Journal of Higher Education*. 37 (1). p.1-11.

Research Papers Presented at Academic/Scientific Conferences (Non-peer-reviewed Proceedings)

Hornby, D.

Hornby, D. Anchor Institutions and University Social Responsibility: Rhodes University's Vice-Chancellor's Schools Initiative and the Knowledge Project. *Community Engagement Learning Symposium*. Amazwi, Makhanda. South Africa. May 2023.

Hornby, D. Rhodes University knowledge project and open access: considerations from a community engagement perspective. *1st International Conference on Community Engagement and Service*. University of Zululand, Empangeni. South Africa. June 2023.

Matyobeni, T.

Matyobeni, T. Being Heard: Digital Storytelling for Social Cohesion in Makhanda. *11th International Digital Storytelling Conference*. University Maryland, Baltimore. USA. June 2023.

Nqowana, T.

Limson, J.L. and **Nqowana, T.** Presenter. Enhancing agency around water treatment and monitoring in remote communities: a case study of citizen science in the Amakhala Game reserve in South Africa. *17th Public Communication of Science and Technology Conference*. Rotterdam, Rotterdam. Netherlands. April 2023.

Oosthuizen, R.C.

Oosthuizen, R.C. Panellists Plenary Session: Community-University Engagement: Perspectives from the Global Majority. *Engaged Scholarship Consortium International Conference*. Michigan State University, Michigan. USA. October 2023.

Oosthuizen, R.C. Presenter. K4C pre-conference open house. Community-University Engagement: Perspectives from the Global Majority. *Engaged Scholarship Consortium International Conference*. Michigan State University, Michigan. USA. October 2023.

Oosthuizen, R.C. Fostering Transformative Change through Engaged Scholarship: Exploring Best Practices and Impact at a Public University in South Africa. *1st International Conference on Community Engagement and Service*. University of Zululand, Empangeni. South Africa. June 2023.

Reddy, K.

Reddy, K. Student volunteers and community partners understanding of community-university partnership: A Case Study of a Child and Youth Care Centre and a University of Technology in South Africa. *Community Engagement Learning Symposium*. Rhodes, Makhanda. South Africa. May 2023.

Reddy, K. The Dimension of Ethics in Training Student Volunteers. *1st International Conference on Community Engagement and Service*. University of Zululand, Empangeni. South Africa. June 2023.

Sibhensana, B.

Sibhensana, B. Curriculum enhancement presentation on Capacity building for Rainwater Harvesting and Conservation and Food Security course offered by the ERLC. *The "Innovation for Sustainability and Societal relevance: Partnership in evidence-based higher Education on food systems and climate change" (INSSPIRE) project Workshop*. Netherlands. July 2023.

Sibhensana, B. Community Engagement and the promotion of the 'social' in innovation and entrepreneurship: Imperatives for higher education institutions. *1st International Conference on Community Engagement and Service*. University of Zululand, Empangeni. South Africa. June 2023.

Talbot, A.L.P.

Talbot, A.L.P. Nine Tenths Mentoring Programme, a Solution for Education (In)Justice in South Africa?: Laying Foundations for Higher Education Access and Catalysing Local Entrants. *SAERA*. Premier Regent, East London. South Africa. October 2023.

Talbot, A.L.P. Empowering Communities through Collaborative Literacy Interventions: The Makhanda Literacy Collective. *LITASA Conference*. Port Elizabeth, Port Elizabeth. South Africa. September 2023.

Talbot, A.L.P. Learning to Make a Difference; measuring value creation in social learning spaces: A case study of Budding. *1st International*

Conference on Community Engagement and Service. Virtual. June 2023.

Talbot, A.L.P. and Mccann, C.M. Conceptualisation and experiences of engaged citizenship as critical consciousness, transformative education and mutual joy: An autoethnography. An autoethnography. *6th World Conference on Research in Teaching and Education (WORLDTE)*. Virtual. July 2023.

Concerts, Exhibitions, Performances, Workshops, Events

Maistry, S. and Hornby, D.

Maistry, S. and Hornby, D. Facilitators. Universities as Anchor Institutions: What role for Community Engagement? *Community Engagement Learning Symposium. Rhodes University.* Amazwi, Makhanda. South Africa. 8 May - 11 January 2023.

Matyobeni, T.

Matyobeni, T. Facilitators. Digital Storytelling for Social Innovation. *Short course workshops.* Open to public. Rhodes, Makhanda. South Africa. 13 - 16 March 2023.

Matyobeni, T. Facilitators. Digital Storytelling for Social Innovation. *Short course workshops. GADRA Education and Mary Waters SSS.* Rhodes, Makhanda. South Africa. 3 - 6 April 2023.

Matyobeni, T. Facilitators. Digital Storytelling for Social Innovation. *Social Psychology 201.* Rhodes, Makhanda. South Africa. 21 April - 19 May 2023.

Matyobeni, T. Facilitators. Digital Storytelling for Social Innovation. *Short course workshops. Public Service Accountability Monitor.* Rhodes, Makhanda. South Africa. 17 - 19 May 2023.

Matyobeni, T. Facilitators. Digital Storytelling for Social Innovation. *Short course workshops.* Open to public. Rhodes, Makhanda. South Africa. 5 - 8 June 2023.

Matyobeni, T. Facilitators. Digital Storytelling for Social Innovation. *Short course workshops. Education Faculty Academics.* Rhodes, Makhanda. South Africa. 14 - 18 August 2023.

Matyobeni, T. Facilitators. Social Entrepreneurship. *Business for Better Lecture and Discussion Series.* Open to public. Rhodes, Makhanda. South Africa. 2 August 2023.

Matyobeni, T. Facilitators. Social Entrepreneurship. *Business for Better Lecture and Discussion Series.* Open to public. Rhodes, Makhanda. South Africa. 16 August 2023.

Matyobeni, T. Facilitators. Social Entrepreneurship. *Business for Better Lecture and Discussion Series.* Open to public. Rhodes, Makhanda. South Africa. 23 August 2023.

Matyobeni, T. Facilitators. Digital Storytelling for Social Innovation. *Short course workshops.* Open to public. Rhodes, Makhanda. South Africa. 3 - 6 July 2023.

Mcconnachie, B., Madiba, E.M., Mathebula, P.N., Matyobeni, T., Ngqezana, K. and Moyo, V.O. Principal investigator and curator. Indigenous Marine Innovations for Sustainable Environments and Economies (IMIsEE): A Sound Postcard Exhibition. *Sound Postcard Exhibition.* AMAWI Literary Museum, Makhanda. South Africa. 24 November - 6 December 2023.

Nkwinti, N.

Nkwinti, N. Discussion. Challenges and Opportunities in the Eastern Cape Province: Insights from Community Observers and Focus Group Discussions. *Covid Observatories Research Workshop.* India. 15 - 22 March 2023.

Nkwinti, N. Facilitators. Reflective learning for Community-University Partnerships. *Siyakhana@Makana Project Management Cycle workshop.* Rhodes, Makhanda. South Africa. 14 June 2023.

Oosthuizen, R.C.

Oosthuizen, R.C. Facilitators. Engaged Research Community of Practice Roundtable. *Term 2: CE Symposium. Engaged Research lessons learned from higher education institutions in the Global South.* Rhodes, Makhanda. South Africa. 10 May 2023.

Oosthuizen, R.C. Facilitators. Engaged Research Community of Practice Roundtable. *Term 1: Engaged Research benefits, challenges and potential solutions.* Rhodes, Makhanda. South Africa. 10 March 2023.

Oosthuizen, R.C. Facilitators. Rhodes University K4C Southern Hub Knowledge Democracy. *Knowledge Democracy.* Online, Victoria. Canada. 14 March 2023.

Oosthuizen, R.C. Facilitators. Integration of Disaster Risk Management into Integrated Development Planning. *Meeting.* Joe Gqabi District Municipality, Eastern Cape. South Africa. 20 April 2023.

Oosthuizen, R.C. Facilitators. Integration into Development Planning of Disaster Risk Management. *Meeting.* Online, Eastern Cape. South Africa. 14 June 2023.

Oosthuizen, R.C. Facilitators. Engaged Research. Research that is responsive to societal challenges. *Research Seminar.* Centre for Postgraduate Studies. Rhodes, Makhanda. South Africa. 19 July 2023.

Oosthuizen, R.C. and Sibhensana, B.

Oosthuizen, R.C. and Sibhensana, B. Facilitators. Transformative and Developmental Community Engagement. *Journalism 3rd year workshop.* Rhodes, Makhanda. South Africa. 21 February 2023.

Oosthuizen, R.C. and Sibhensana, B. Facilitators. Engaged Research. Research that is responsive to societal challenges. *Seminar. Journalism PGDip in Media and Research.* Rhodes, Makhanda. South Africa. 17 February 2023.

Sibhensana, B. and Nqowana, T

Sibhensana, B. and Nqowana, T. Facilitators. Service Learning. *Short course workshops.* Academics. University of Zululand, Empangeni. South Africa. 9 - 13 October 2023.



Virgil Matrass, piano teacher at AMP, with a brand new musician at the Joza Youth Hub. Photo: Chris Marais.

DEPARTMENT OF Accounting



Edward Horn
Head of Department

Introduction

The primary research stream in the Department of Accounting remains the Master of Commerce degree, specialising in Taxation. On other research fronts, the Department had a quiet research year in 2023, due to the focus on the delivery of the South African Institute of Chartered Accountants (SAICA) accredited professional programme.

Postgraduates / Graduations

Professor Lilla Stack continued her stellar record of supervising Postgraduate students. To date, she has graduated ninety seven (97) students, eighty (80) master's and seventeen (17) doctorate) in her career, of which seventy-eight (78), master's and eight (8) doctorate students graduated from Rhodes University.

In 2023, Professor Stack graduated three (3) master's (one (1) co-supervised by Mr Richard Poole) and one (1) doctorate student.

Distinguished Visitors / International Visits

A collaboration was developed in which Auditing 3 students and their counterparts at Coventry University in the United Kingdom teamed up in a simulated international auditing environment made possible by technology. They worked on providing solutions to real-life scenarios. The feedback was overwhelmingly positive from students at both universities, and the collaboration will continue next year.

Significant Research Aligned Events

Emeritus Associate Professor Jackie Arendse continued to share her expertise by presenting numerous tax webinars and seminars throughout the year to tax professionals, accountants and businesses around the country.



Left: Professor Lilla Stack (right): Dr Chipo Simbi, who obtained her PhD at the October 2023 graduation ceremony. The photo was taken on the day of graduation.

Photo: Department of Accounting.

Books/Chapters/Monographs

Emeritus Associate Professor Jackie Arendse is the managing author of *Silke on Tax Administration*, a peer-reviewed, annually updated reference work on the administrative provisions of taxation legislation in South Africa. Widely used by professionals, academics and students, the book explains the investigation and audit powers of the South African Revenue Service (SARS), provides guidance on taxpayers' rights relating to taxation, and incorporates commentary and interpretation on a range of legislative items.

During 2023 Associate Professor Arendse updated eight (8) chapters in the book, as listed in the publications to follow.

Books/Chapters/Monographs

Arendse, J.A.

Arendse, J.A. (2023) Chapter 4: Registration, returns, assessments and records. In: *Silke on Tax Administration*. 15th Ed. South Africa: Lexis Nexis (Pty) Ltd. p.4.1-4.61. ISBN: 9780409059366.

Arendse, J.A. (2023) Chapter 5: Dispute resolution. In: *Silke on Tax Administration*. 15th Ed. South Africa: Lexis Nexis (Pty) Ltd. p.5.1-5.72. ISBN: 9780409059366.

Arendse, J.A. (2023) Chapter 6: Advance rulings. In: *Silke on Tax Administration*. 15th Ed. South Africa: Lexis Nexis (Pty) Ltd. p.6.1-6.38. ISBN: 9780409059366.

Arendse, J.A. (2023) Chapter 7: Administrative penalties. In: *Silke on Tax Administration*. 15th Ed. South Africa: Lexis Nexis (Pty) Ltd. p.7.1-7.73. ISBN: 9780409059366.

Arendse, J.A. (2023) Chapter 8: Audit, investigation, search, seizure and access to information. In: *Silke on Tax Administration*. 15th Ed. South Africa: Lexis Nexis (Pty) Ltd. p.8.1-8.53. ISBN: 9780409059366.

Arendse, J.A. (2023) Chapter 9: Payment of taxes, refunds and SARS' collection powers. In: *Silke on Tax Administration*. 15th Ed. South Africa: Lexis Nexis (Pty) Ltd. p.9.1-9.91. ISBN: 9780409059366.

Arendse, J.A. (2023) Chapter 10: Registration, returns, assessments and records. In: *Silke on Tax Administration*. 15th Ed. South Africa: Lexis Nexis (Pty) Ltd. p.10.1-10.15. ISBN: 9780409059366.

Arendse, J.A. (2023) Chapter 11: Miscellaneous provisions. In: *Silke on Tax Administration*. 15th Ed. South Africa: Lexis Nexis (Pty) Ltd. p.11.1-11.62. ISBN: 9780409059366.

Peer Reviewed Subsidy-Earning Journal Research Publications

Simbi, C.

Oyewo, B., Hussain, S.T. and **Simbi, C.** (2023) Challenges of implementing management accounting innovations: Evidence from the field. *Prometheus*. 38 (4). p.399-426.

DEPARTMENT OF Anthropology



Dr Pascall Taruvinga
Head of Department

Introduction

The period under review was characterised by increasing Postgraduate research enrolment, and staff members receiving research funding from various sources, (NRF, African Studies Centre, and Rhodes University). This has resulted in diversified research, conference presentations, increased first time approvals of Postgraduate student proposals and increased number of publications in the areas of anthropology and heritage management studies, as illustrated below. This is in line with the research trajectory of the Department going into the future and is fostering sole and co-supervisions across the Postgraduate student's research.

Postgraduates / Graduations

Dr Gabriel Darong assisted two Masters students researching on *Double Jeopardy: reflections of accessing and navigating public spaces during COVID-19* (a comprehensive study of the impact of the pandemic on people who are blind or have impaired vision), and *Medical Pluralism Amongst Makhandha Traditional Health Practitioners: Exploring Dispositions to COVID-19 Vaccinations* (a qualitative approach to explore the dispositions of Traditional Health Practitioners (THPs) towards COVID-19 vaccinations to understand the practice and acceptance of medical pluralism through a traditional lens). Both students graduated with distinctions.

Dr Gabriel Darong and **Dr Pascall Taruvinga** assisted a PhD candidate researching on "Preserving Traditional Healing Knowledge: Participatory Approach to Exploring The Role of Museums In Makhandha, Eastern Cape, South Africa". The study aims to explore how museums in Grahamstown (Makhandha) include and can better include traditional healing knowledge in their collections and exhibitions. The research engages anthropological and heritage perspectives of the subject matter.

Dr Melusi Dhlamini assisted a Masters student researching on ethnographic exploration of how communities in Kwazulu-Natal grappled with being bereaved under the lockdown restrictions of COVID-19 in 2020. In particular, the study focused on how 'social distancing' resulted in profound restrictions of funerary rituals and thus disruptions of cultural bereavement rituals.

Mathapelo Pitso assisted an Honours student researching on - "Behind the Loupe: analysing how the Eastern Cape's South African Police Service Forensic Department investigates unidentified human remains". Through a qualitative study, the project mainly sought to explore and discuss how does Makhandla manage to keep their Forensic Science Laboratory's backlog rates relatively lower than other areas in the province (Eastern Cape) despite having high murder rates and limited resources? The study opens up research on forensic anthropology as niche area for the Department of Anthropology which is being offered for the first time since 2023.

Pascall Taruvinga and **Mitchell Cocks** assisted a Masters student working on *Sacred Topographies: exploring Islamic Heritage through Local Perspectives, An Investigation of The Cultural Significance of The Grace Street Mosque in Gqeberha, Eastern Cape*. The research is investigating where and how heritage value(s) are created, located, embodied, and mobilized by Muslims and non-Muslims alike; the management and preservation procedures that are used to support them; and the ways in which various stakeholders and power structures are involved in the authorization of different kinds of heritage preservation.

Pascall Taruvinga assisted a Masters student's research on *Spiritual repatriation of human remains: the experiences and perspectives of Ngquza community in Eastern Cape, South Africa*. The research critically analyses the Mpondo experience with repatriation of human remains, with an emphasis on the spiritual dimension as informed by their cultural beliefs and practices, which contributes to understanding African cultural beliefs and practices associated with repatriating human remains.

Mitchell Cocks and Pascall Taruvinga assisted a PhD candidate's study: *Exploring Mbona Indigenous Religion and the Global Sustainability Dimensions of the Khulubvi Sacred Grove in the Lower Shire Valley in Southern Malawi*. The research investigates how ontologies of Mbona indigenous religion, and understandings and practices at Khulubvi sacred grove, can offer new ways of understanding of human-nature relations while facilitating inclusive biodiversity sustainability approaches on the African continent.

Dominique Santos assisted several Masters students and PhD candidates researching on various topics among the: Public knowledge and representation of shipwreck maritime heritage on the Eastern Cape's coastal belt; Restorative History and Underwater, Marine and Coastal Cultural Heritage and Memory with an emphasis on Portuguese Slave Shipwrecks of the Indian Ocean Coast of South Africa: Exploring the Cultural Use of Healing Cosmologies in the Management of Historical and Inter-generational Trauma Amongst the Xhosa-Speaking People

of South Africa; Wellbeing Networks for Social Leaders and Indigenous Healers in South Africa; Parenting Contexts, Challenges and Strategies: The Experience of Nigerian Immigrants in Atlanta, Georgia, USA; Performing Whiteness: Everyday Whiteness and its Relationship to Racism in South Africa; Exploring Children's Play and Volunteer Participation in Urban Community-Based River Stewardship to Measure Social Resilience; and Queens of Ancient Africa: Discrepancies and Connections in Representations of Kandake Amanirenas of Nubia and Makeda, Queen of Sheba.

Significant Research Aligned Events

Melusi Dhlamini completed his PhD research which highlights diverse expressions of love and intimate relationships among thirty-four (34) participants in the Durban townships. The findings underscore the transformative potential of romantic relationships in resisting traditional masculinities, contributing valuable insights to local and international masculinities scholarship.

Melusi Dhlamini has researched and submitted the following papers for publication:

Dlamini, M.A., 2023. I Show Her My Feelings: Young Black Men and the Doing of Love in a South African Township. *Feminist Encounters*, 7(2). <https://doi.org/10.20897/femenc/13552>; Ngidi, N. D. and **Dlamini, M. A.**, forthcoming. Becoming 'fully a boy' at School: *Ukufikisana* and the Construction of Masculinities in a South African Township School. [Submitted to *Men and Masculinities*]; and **Dlamini, M.A.**, Under Review. *Your life needs to have some balance: Young black men negotiating loving and being loved in a South African township*. [Submitted to *Gender & Place Journal*]

Gabriel Darong, through the NFR Funding, continues to undertake research on Medical Pluralism in Makhandla: exploring collaborative opportunities amongst healthcare providers in understanding and approaching health and illness medical pluralism in Makhandla, which has created research opportunities for Postgraduate students and emerging papers are being reviewed by publishing houses. This study explores the potential of medical pluralism in Makhandla by identifying collaborative opportunities amongst healthcare providers in understanding and approaching health and illness.

Gabriel Darong attended six (6) conferences and presented on the following research themes: Experience of alternative health-seeking for depression management amongst young people in Makhandla, Eastern Cape, South Africa (19th IUAES-WAU World Anthropology Congress 2023 - New Delhi, India); The role of multi-collaborative approaches in enhancing deep learning amongst Medical Anthropology undergraduates at a South African University (HELTASA (UN)CONFERENCE - North-West University, Vanderbijlpark); and Learning about Medical Anthropology through service-learning: experience of Undergraduate students in a South African University South Africa (Rhodes University Community Engagement Symposium - Makhandla, South Africa).

Pascall Taruvinga attended and presented on *Interpretation and Presentation of World Heritage Properties in Africa during the WHIPIC/AWHF* (UNESCO Category II Centres in Asia and Africa respectively) Africa Regional Workshop held in Namibia in November 2023. The paper explored the emerging interpretation and presentation issues. Research and coordination continues towards producing a Regional Booklet on Interpretation and Presentation of Heritage in 2024.

Mathapelo Pitso, is undertaking PhD research through UCT focussing on forensic anthropology with a focus on blast trauma in varying environments. The research, which is still undergoing reviews for ethical clearance, investigates the difference in skeletal trauma patterns on porcine samples in indoor and in confined explosions. It will contribute to beginning to address issues around the investigation of patterns and distribution of skeletal trauma in various blasts scenarios. Understanding patterning and distribution of blast trauma in various environments will allow forensic anthropologists to make better contributions in the contexts of human rights violations and acts of terrorism.



Photo: Chris Marais.

DEPARTMENT OF

Anthropology

Peer Reviewed Non-Subsidy-Earning Journal Research Publications

Aswani, S.

Celliers, L., Costa, M.M., Rolfer, L., **Aswani, S.** and Ferse, S. (2023) Social innovation that connects people to coasts in the Anthropocene. *Cambridge Prisms: Coastal Futures*. 1 (24). p.1-10.

Peer Reviewed Subsidy-Earning Journal Research Publications

Aswani, S.

Glaser, M., Selim, S., De la Cruz- Modino, R., van Putten, I., **Aswani, S.**, Paytan, A., Dutra, L.X.C., Heck, N., Narayan, S., **Sauer, W.H.H.**, Boonstra, W.J. and Snow, B. (2023) Analysis across case- based global sustainability projects: an emerging challenge for ocean conflict research in the Anthropocene. *Maritime Studies*. 22 (48). p.1-23.

Imbwae, I., Aswani, S. and Sauer, W.H.H. (2023) Socio-Economic and Environmental Challenges of small-scale Fisheries: Prognosis for Sustainable Fisheries Management in Lake Kariba, Zambia. *Sustainability*. 15 (4). p.1-19.

Imbwae, I., Aswani, S., Sauer, W.H.H. and Clinton, H. (2023) Trans-boundary Fisheries Management in Kavango-Zambezi Transfrontier Conservation Area (KAZA-TFCA): Prospects and Dilemmas. *Sustainability*. 15 (5). p.1-11.

van Putten, E.I., **Aswani, S.**, Boonstra, W.J., De la Cruz-Modino, R., Das, J., Glaser, M., Heck, N., Narayan, S., Paytan, A., Selim, S. and Vave, R. (2023) History matters: societal acceptance of deep-sea mining and incipient conflicts in Papua New Guinea. *Maritime Studies*. 22 (3). p.1-11.

Cocks, M.

Moller, V., **Cocks, M.** and Vetter, S. (2023) Nature-Connectedness and well-being experienced during best and worst times of life: A case for safeguarding biocultural diversity. *Social Indicators Research*. 165 (2023). p.1053-1089.

Darong, G.G.

Dlamini, N., **Darong, G.G.** and Nkwanyana, N.M. (2023) South African women's use of African traditional medicine during pregnancy: A scoping review. *African Journal of Reproductive Health*. 27 (11). p.91-98.

Dlamini, M.A.C.

Dlamini, M.A.C. (2023) I Show Her My Feelings: Young Black Men and the Doing of Love in a South African Township. *Feminist Encounters: A Journal of Critical Studies in Culture and Politics*. 7 (2). p.1-11.

Masterson, V.

Sorice, M.G., Rajalakshmi, K., Brown, B.L., **Masterson, V.** and Fuhlendorf, S.D. (2023) Relationship with the land as a foundation for ecosystem stewardship. *Frontiers in Ecology and the Environment*. 21 (6). p.282-288.

Santos, D.

Santos, D. (2023) Self-devouring growth: a planetary parable as told from Southern Africa by Julie Livingston. Durham, Duke University Press, 2019, 176 pp. ISBN 978-1-4780-0639-8. *Anthropology Southern Africa*. 46 (1). p.73-75.

Santos, D. (2023) 'Subsistence Fishermen Don't Exist': The Subtleties of Categories and Accessing the Water during a Covid-19 Lockdown. *African Histories and Modernities*. 1326 (2023). p.119-139.

Van Wijk, Y.

Zwane, B., Bamford, M., **Van Wijk, Y.** and Wurz, S. (2023) An analysis and environmental interpretations of wood charcoal from the Later Stone Age deposit at Klasies River cave 1, Tsitsikamma Coast. *South African Journal of Botany*. 160 (2023). p.147-156.

DEPARTMENT OF Biochemistry, Microbiology and Bioinformatics



Dr Jo de la Mare
Head of Department

Introduction

The Department is home to eleven (11) academic staff members, eleven (11) support staff members and fifty-nine (59) Postgraduate students carrying out research in three (3) disciplines, namely Biochemistry, Microbiology and Bioinformatics. The department hosts two (2) research units, the Research Unit in Bioinformatics (RUBi), under the directorship of Professor Özlem Tastan Bishop, and the Biomedical Biotechnology Research Unit (BioBRU), led by Professor Adrienne Edkins. In addition in 2023, the Department had two (2) DST/NRF SARCHI Chairs, one (1) in the Molecular and Cellular Biology of the Eukaryotic Stress Response (Professor Adrienne Edkins) and one (1) in Marine Natural Products Research (Professor Rosemary Dorrington).

All staff members are actively engaged in research as evidenced by the number of research outputs outlined below, in terms of prestigious grants awarded, publications, conference presentations and student graduations.

Research conducted by individual research groups spans a wide range of topics and sub-disciplines. Basic biomedical research projects include natural product and synthetic chemistry drug discovery programmes using computational and laboratory-based methods aimed at pathogenic bacteria, cancer, tuberculosis, HIV, SARS coronavirus, diabetes and obesity. It further includes research into the stress response machinery of cancer cells, as well its role in Kaposi's sarcoma-associated herpesvirus biology and the interaction of picornaviruses, TB bacteria and *Salmonella* bacteria with host cells. One health-related water quality assessment is also a research focus in terms of bacterial pathogenesis mechanisms, antimicrobial resistance and the transmission pathways of infectious pathogens. Research into biotechnological applications includes the investigation of mycorrhizal fungi for application as

biofertilizers in horticulture, agriculture and forestry, the use of enzymes to generate prebiotics, foods/feeds and products of biomedical significance from seaweeds, the exploitation of insect viruses for agricultural pest control, and studying microbiome contributions to aquaponic crop production. The department contributed two (2) book chapters, fifty-nine (59) authored or co-authored peer-reviewed journal articles and twenty-three (23) conference presentations in 2023.

Postgraduates / Graduations

The department graduated eleven (11) BSc Hons, six (6) MSc students and twelve (12) PhD candidates in the April and October ceremonies of 2023. There was significant international engagement by our Postgraduates and Postdoctoral Fellows in the form of conference presentations and research visits.

Lillian Ang'ang'o attended the ANTI-VeC annual meeting in February 2023 in Kenya and the 16th International Workshop on Protists in August 2023 in Switzerland. Laura Dingle visited Glaxo-SmithKline in Spain in May 2023 as part of a Tres Cantos Open Lab Foundation fellowship. Bongiwe Sibiya and Elisa Kirigin presented at the EMBO Workshop on Protein Quality

Control: From Molecular Mechanisms to Therapeutic Intervention in Croatia in May. Jarmo-Charles Kalinski presented at the Metabolomics 2023 conference in June in Canada. Lithalethu Mkabayi presented at the 71st International Congress and Annual Meeting of the Society for Medicinal Plant and Natural Product Research in Ireland in July 2023. Laura Dingle, Abir Chakraborty and Richwell Mhlanga presented at the Stress Proteins in Growth, Development and Disease Gordon Research Conference in Italy in July 2023. Wayde Veldman attended the ISMB/ECCB 31st annual Intelligent Systems For Molecular Biology and the 22nd Annual European Conference on Computational Biology in France in July 2023. Chiratidzo Chamboko visited Uppsala University in Sweden for the Inaugural meeting of the Cluster of Research Excellence: Addressing Global and African Challenges through Methods from Artificial Intelligence, Data Science and Theoretical and Computational Thinking (CoRE AI) in November 2023.

Right: Professor Adrienne Edkins at her inaugural lecture with members of the Biomedical Biotechnology Research Unit.

Below: Professor Özlem Tastan Bishop, at her inaugural lecture with (from left) Vice-Chancellor, Professor Sizwe Mabizela; Dean of Science, Professor Tony Booth; Deputy Vice-Chancellor: Academic and Student Affairs, Professor 'Mabokang Monnapula-Mapesela and retired Deputy Vice-Chancellor: Research, Innovation and Strategic Partnerships, Professor Peter Clayton.

Photos: Department of Biochemistry, Microbiology and Bioinformatics.



One health-related water quality assessment is also a research focus in terms of bacterial pathogenesis mechanisms, antimicrobial resistance and the transmission pathways of infectious pathogens.



From left: Alumnus Dr Deborah Kajewole, Professor Adrienne Edkins and Postdoctoral fellow Dr Laura Dingle at Glaxo-SmithKline in Spain. Professor Edkins and Dr Dingle attended GSK as part of a Tres Cantos Open Lab Foundation fellowship. Photo: Department of Biochemistry, Microbiology and Bioinformatics.

Distinguished Visitors / International Visits

Professor Adrian Whitehouse and Freddy Weaver (PhD candidate) from Leeds University visited the department in July 2023 as part of a collaboration with Professor Adrienne Edkins funded by a United Kingdom Research and Innovation-Medical Research Council-African Research Leaders grant towards evaluating host-virus interactions in Kaposi Sarcoma Herpes Virus-related malignancies. Professor Andrew McKechnie and his Postdoctoral Fellow Marc Freeman from the University of Pretoria also visited the department, as part of a collaborative project with Professor Edkins to understand climate change and body temperature in birds. Professor Edkins was invited

to visit Glaxo SmithKline Tres Cantos Open Lab in Madrid in May 2023 as part of a TCOLF fellowship and attended the Kaposi-Sarcoma Herpes Virus 2023 international meeting in Dar es Salaam, Tanzania. Professor Edkins and Professor Özlem Tastan Bishop attended a drug discovery workshop in Nairobi hosted by the Science for Africa Foundation and Grand Challenges African programme. Professor Tastan Bishop also undertook three international research visits during her sabbatical - to Kadir Has University (Turkey), the University of Bern (Switzerland) and Uppsala University (Sweden). In each University, she gave a seminar and discussed potential collaborations on pharmacogenomics research.

Significant Research Aligned Events

Academics from the department presented their research findings both locally and abroad, as detailed in the conference outputs below. Professor Brett Pletschke gave a plenary talk at Exploring New Horizons In Biotechnology (ENB-2023) held in India in February 2023. Dr Michael Jukes presented at the 55th Annual Meeting of the Society for Invertebrate Pathology in USA in July/August 2023. Professor Özlem Tastan Bishop gave an invited talk at the National Institute for Theoretical and Computational Sciences (NIThECS) Colloquium at Stellenbosch University in February 2023 and a plenary address in December 2023 at the (BBCC2023) Bioinformatics and Computational Biology Conference in Italy.

Two (2) academics from the Department gave their inaugural lectures for their promotion to Full Professor. Professor Edkins delivered her lecture "Protein origami and human disease: form, function and the shape of things to come" on 3 August 2023 and Professor Tastan Bishop (promoted in 2020) delivered a lecture "From Istanbul to Grahamstown/Makhanda: Different countries, cultures and education but always science" on 11 October 2023.

The staff in the Department attracted a number of prestigious local and international grants. In particular, Professor Tastan Bishop was awarded a Novo Nordisk Foundation grant of EUR 412,852 to support a proof-of-concept project to establish a computational approach to predict drug resistance mutations using SARS-CoV2 Mpro.

Academic staff in the Department are members of two Africa-Europe Clusters of Research Excellence. These Clusters are an initiative established by the African Research Universities Alliance (ARUA) and the Guild of European Research-Intensive Universities. Professor Tastan Bishop is part of the Cluster of Research Excellence: Addressing Global and African Challenges through Methods from Artificial Intelligence, Data Science and Theoretical and Computational Thinking (CoRE AI). In addition, Professor Tastan Bishop and Professor Edkins and Dr Jo de la Mare form part of the CoRE: Genomics for Health in Africa Consortium. Professor Edkins was invited to be a Senior Editor of the *Cell Stress and Chaperones* journal, which is published by Elsevier, and Professor Tastan Bishop was invited to serve as an Associate Editor for *PLOS Computational Biology* journal.

Biochemistry, Microbiology and Bioinformatics

Books/Chapters/Monographs

Dames, J.F.

Ranadev, P., Revanna, A., **Dames, J.F.** and **Bagyaraj, D.J.** (2023) Arbuscular Mycorrhizal Fungi as Biofertilizers for Sustainable Agriculture. In: *Biofertilizers: Agricultural Uses, Management and Environmental Effects*. New York: Nova Science Publishers, Inc. p.1-32. ISBN: 9798891131422.

Ramatsui, L., Sithole, T., Mzimkulu-Ncoyi, N.H. and **Pletschke, B.I.** (2023) Chapter 5 - The use of xylanases as additives to feeds: a mini-review of their effect on feed digestion and growth performance of monogastric animals. In: Shukla, P.S. (ed.). *Microbial Bioprocesses: Applications and Perspectives*. London: Elsevier Academic Press. p.83-105. ISBN: 9780323953320.

Peer Reviewed Subsidy-Earning Journal Research Publications

Abrahams, G.L.

Nwahara, N., Abrahams, G.L., Mack, J., Prinsloo, E. and **Nyokong, T.** (2023) A hypoxia responsive silicon phthalocyanine containing naphthquinone axial ligands for photodynamic therapy activity. *Journal of Inorganic Biochemistry*. 239 (2023). p.1-11.

Ang'ang'o, L.

Nattoh, G., Onyango, B., Makhulu, E.E., Omoke, D., **Ang'ang'o, L.** and *et al.* (2023) Microsporidia MB in the primary malaria vector *Anopheles gambiae sensu stricto* is avirulent and undergoes maternal and horizontal transmission. *Parasites and Vectors*. 16 (1). p.1-12.

Ang'ang'o, L. and **Tastan Bishop, Ö.**

Ang'ang'o, L., Herren, J.K. and **Tastan Bishop, Ö.** (2023) Structural and Functional Annotation of Hypothetical Proteins from the Microsporidia Species *Vittaforma corneae* ATCC 50505 Using *in silico* Approaches. *International Journal of Molecular Sciences*. 24 (4). p.1-27.

Blatch, G.L.

Kakoulidis, P., Vlachos, I.S., Thanos, D., **Blatch, G.L.,** Emiriz, I.Z. and Anastasiadou, E. (2023) Identifying and profiling structural similarities between Spike of SARS-CoV-2 and other viral or host proteins with Machaon. *Communications Biology*. 6 (2023). p.1-16.

Almaazmi, S.Y., Kaur, R.P., Singh, H. and **Blatch, G.L.** (2023). The Plasmodium falciparum exported J domain proteins fine-tune human and malarial Hsp70s: pathological exploitation of proteostasis machinery. *Frontiers in Molecular Biosciences*. 10 (2023). p.1-13.

Singh, H., Almaazmi, S.Y., Dutta, T., Keyzers, R.A. and **Blatch, G.L.** (2023) *In silico* identification of modulators of J domain protein-Hsp70 interactions in *Plasmodium falciparum*: a drug repurposing strategy against malaria. *Frontiers in Molecular Biosciences*. 10 (2023). p.1-11.

Brooks, M.

Gu, C., Lv, W., Liao, X., **Brooks, M.,** Li 1, Y., Yu, C., Yang, L., Li, X., Hu, W., Dai, J., Zheng, W. and Qin, L. (2023) Green Manure Amendment Increases Soil Phosphorus Bioavailability and Peanut Absorption of Phosphorus in Red Soil of South China. *Agronomy*. 13 (1). p.1-10.

Chakraborty, A. and **Edkins, A.L.**

Chakraborty, A. and **Edkins, A.L.** (2023) CHIP: A Co-chaperone for Degradation by the Proteasome and Lysosome. *Sub-Cellular Biochemistry*. 101 (2023). p.351-387.

Chakraborty, A., Blatch, G.L. and **Edkins, A.L.**

Chakraborty, A., Blatch, G.L. and **Edkins, A.L.** (2023) Bimolecular Fluorescence Complementation Assay to Evaluate HSP90-Client Protein Interactions in Cells. *Methods in molecular biology (Clifton, N.J.)*. 2693 (2022). p.95-103.

Chakraborty, A., Tonui, R. and **Edkins, A.L.**

Chakraborty, A., Tonui, R. and **Edkins, A.L.** (2023) Mutations F352A and Y528A in human HSP90 reduce fibronectin association and

fibrillogenesis in cell-derived matrices. *Cell Stress and Chaperones*. 2023 (2023). p.1-11.

Chamboko, C.R., Veldman, W.M., Tata, R.B.T. and **Tastan Bishop, Ö.** (2023) Human Cytochrome P450 1, 2, 3 Families as Pharmacogenes with Emphases on their Antimalarial and Antituberculosis Drugs and Prevalent African Alleles. *International Journal of Molecular Sciences*. 24 (4). p.1-29.

Davison, C. and **de La Mare, J.A.**

Maikoo, S., **Davison, C., de La Mare, J.A.** and Booyesen, I.N. (2023) Formation, biomolecular interaction and cytotoxicity studies of new organoruthenium Schiff base compounds. *Polyhedron*. 245 (2023). p.1-16.

Edkins, A.L.

Veale, C.G.L., **Edkins, A.L.,** Olomola, T. and Chellan, P. (2023) Biological and Medicinal Chemistry in Africa. *ChemBioChem*. 24 (8). p.1-3.

van Oosten-Hawle, P., Backe, S.J., Ben-Zvi, A., Bourboulia, D., Brancaccio, M., Brodsky, J., Clark, M., Colombo, G., Cox, M.B., De Los Rios, P., Echtenkamp, F., **Edkins, A.L.,** Freeman, B., Goloubinoff, P., Houry, W., Johnson, J., LaPointe, P., Li, W., Mezger, V., Neckers, L., Nillegoda, N.B., Prahlad, V., Reitzel, A., Scherz-Shouvel, R., Sistonen, L., Tsai, F.T.F., Woodford, M.R., Mollapour, M. and Truman, A.W. (2023) Second Virtual International Symposium on Cellular and Organismal Stress Responses. *Cell Stress and Chaperones*. 28 (1). p.1-9.

Veale, C.G.L., **Edkins, A.L.,** Winks, S., Njoroge, M. and Chibale, K. (2023) Including African data in drug discovery and development. *Nature Reviews Drug Discovery*. 22 (1). p.521-522.

Edkins, A.L., Zweckstetter, M. and Sawarkar, R. (2023) Tenth International Symposium on the Hsp90 chaperone machine. *Cell Stress and Chaperones*. 28 (3). p.1-7.

Jamabo, M., Mahlalela, M.E., Edkins, A.L. and **Boshoff, A.** (2023) Tackling sleeping sickness: current and promising therapeutics and treatment strategies. *International Journal of Molecular Sciences*. 24 (15). p.1-30.

Edkins, A.L. and **Blatch, G.L.**

Edkins, A.L. and **Blatch, G.L.** (2023) Complementation Assays for Co-chaperone Function. *Methods in Molecular Biology (Clifton, N.J.)*. 2693 (2023). p.105-111.

Govindaraj, D.B.T.

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Hoppe, H.C.

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Postdoctoral Fellows (from left) Dr Abir Chakraborty, Dr Laura Dingle and Dr Richwell Mhlanga at the Stress Proteins in Growth, Development and Disease Gordon Research Conference in Italy.

Photo: Department of Biochemistry, Microbiology and Bioinformatics.



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Albany Museum. Photo: Chris Marais.

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DEPARTMENT OF

Biotechnology and the Biotechnology Innovation Centre (RUBIC)



Associate Professor Earl Prinsloo
Head of Department

Introduction

The Rhodes University Biotechnology Innovation Centre (RUBIC) continues to redefine higher education training and research in Biotechnology in the country and beyond. By integrating our teaching and research programmes with community engagement and entrepreneurship, our graduates receive training in transdisciplinary approaches that will better prepare them to make leading interventions in addressing global challenges. Recent research at RUBIC has focused on translating scientific research into practical applications that possess societal and economic impacts. RUBIC is dedicated to fostering a culture of scientific excellence, supporting Postgraduate education, and facilitating international collaborations, all while addressing critical challenges in biotechnology.

Water research continued to be a major focal point for engaged research of the DSI/NRF South African Research Chair in Biotechnology Innovation and Engagement, held by Professor Janice Limson. Responsive to local challenges on water quality and access to knowledge thereof, the Chair and its partners co-created and launched the Rhodes University Community Water Testing Facility, opening its doors to community members requiring vital information on the microbial quality of water. The significance of the facility was underscored by coverage on several radio, digital media and television platforms. Ms Lwazikazi Madikiza, Project Administrator and Science Engagement manager of the Chair, works collaboratively with local stakeholders such as the Public Service Accountability Monitor and its A4A working group comprised of community members and Makana Municipality, to support access to the laboratory testing and training around water quality data.



Professor Janice L Limson
Director

RUBIC serves as the proud host to the DSI Nano-Micro Manufacturing Facility in Paper-Based Diagnostics. Led by Professor Janice Limson and Dr Ronen Fogel, the facility continued to benefit from DSI funding to equip its designated laboratory with essential equipment to support the scale-up and manufacture of rapid diagnostics in South Africa.

RUBIC was also selected to serve as the UNICEF Innovation Biotechnology Node with Professor Limson joining UNICEF at the inaugural Sydney SXSW conference in Australia to share insights on how this unique partnership can drive “Social Impact-Driven Biotechnology”.

Postgraduates / Graduations

In 2023, RUBIC hosted nineteen (19) Postgraduate students, consisting of a cohort of four (4) Honours, eleven (11) Masters, and four (4) PhD candidates. The Centre celebrated the April and October 2023 graduations with 6 (six) Honours students (including two (2) distinctions), four (4) MSc students (including distinctions for Ms Laura Nisbet and Mr Ryan Du Toit) and two (2) PhD candidates. The PhD graduates, Dr Miebaka Jamabo and Dr Maduma Mahlalela - both supervised by Professor Aileen Boshoff - contributed further to our understanding of malarial and trypanosome parasite molecular biology. Mr Ntobeko Songcata, a PhD candidate, continued his journey as an entrepreneur while being a registered Doctoral candidate by winning the Student Entrepreneurship Award for the RU x AGCLE Top 100 Leadership Awards, as well as business incubation support from the East London IDZ.

Three (3) Postdoctoral Research Fellows were hosted by the BioSENs research group: Dr Nhamo Mutingwende, who played a pivotal role in the establishment of the Water Testing Facility; Dr Ruchika Chauhan, who supported development of electrochemical sensors; and Dr Linda Khumalo who focused on engaged research in biotechnology. The Biotechnology Honours students Mr Yamnkela Manana (Team Captain), Ms Peace Chauke, Mr Tadiwa Kambani and Mr Siyabonga Mazibuko represented RUBIC at the annual Intervarsity Brewing Competition, which is hosted by the Central University of Technology, where they won the FoodBev SETA Best Label Floating Trophy and R10 000 for designing the best label.

Distinguished Visitors / International Visits

The BioSENs research group hosted an international workshop during the visit by Professors Alina Vasilescu (International Centre of Biodynamics, Romania) and Cristina Purcarea (Institute of Biology Bucharest, Romanian Academy, Romania) as part of an EU M-ERA.NET grant funded through the Department of Science and Innovation. Locally led by Professor Janice Limson and Dr Ronen Fogel, this multi-country initiative is researching the development of innovative enzyme coatings for use in developing electrochemical and paper-based sensors for fungicide testing in crops and aldehydes in wines. Dr Ravendra Chauhan was a visiting researcher hosted at RUBIC and was instrumental in establishing a facility for surveillance of bacterial

RUBIC Water testing team. *From left to right:* Mr Phila Nombombo, Chief Jessica Walton, Professor Janice Limson, Dr Martin Mickelsson and Dr Nhamo Mutingwede. Photo: RUBIC.



and viral pathogens in the environment and in animals, focusing in particular on the domestic and commercial poultry sector.

Significant Research Aligned Events

RUBIC has been at the forefront of several significant research-aligned events in 2023. Key research highlights include:

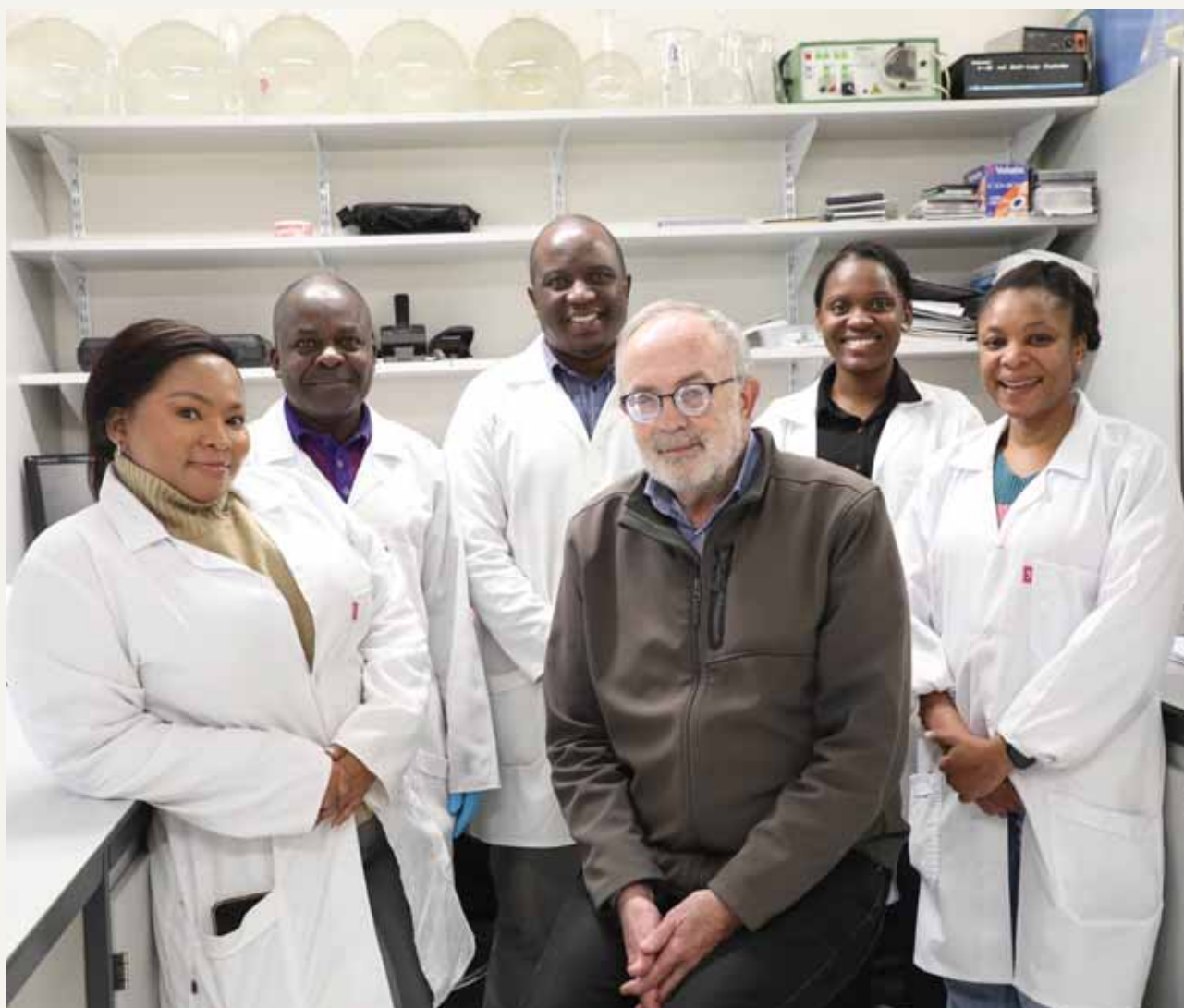
DSI/NRF South African Research Chair in Biotechnology Innovation and Engagement and the BioSens Research Group: Led by Professor Janice Limson (SARChI holder) and Dr Ronen Fogel, the group made groundbreaking strides in aptamer development and paper-based diagnostics. The group's research has led to several publications and patents, significantly advancing diagnostic methods and disease monitoring.

In a world first, this research group filed a patent for aptamers to human chorionic gonadotropin, hCG. A marker of pregnancy and its progression, this study is aimed at developing a newer class of diagnostic tests for pregnancy with greater precision, lower cost and longer shelf-life. Research continued on the development of aptamer-based diagnostics for a range of targets with direct impact on human health.

With an emphasis on engaged research, PhD candidate, Thandiswa Nqowana, developed a proof-of-concept device for monitoring water quality in low-resource environments. This work was supported by a strong focus on engaged research informed by community engagement. The research group, through its collaborations, made significant strides in developing a framework for monitoring zoonotic pathogens.

Professor Limson was invited to serve as Chairperson of the Academy of Science of South Africa (ASSAf) Science, Technology, Engineering, Mathematics and Innovation (STEMI) Standing Committee in 2023. She was also elected as a Board Member of the International Society for Microbial Electrochemistry and Technology (ISMET) and continued to serve on the Institute of Electrical and Electronics Engineers (IEEE) Teaching Awards Committee.

Parasite Molecular Biology and Drug Discovery: Professor Boshoff's research program continues to be a cornerstone of RUBIC's accomplishments. Her team has made significant advances in understanding human and parasite chaperone protein biology, which is crucial for developing therapeutic interventions for diseases such as Malaria and Trypanosomiasis.



Above: *From left to right:* Lithalethu Hashe, Wiya Masudi, Rudzani Manafe, Professor Keith Cowan, Jessica Bonya and Lerato Baloyi-Mokwena.

Right: Mr Ntobeko Songcata.

Photo: RUBIC.

Tissue Engineering and Organ-on-a-Chip Models: The Prinsloo Lab explores diverse biotechnological frontiers, including cellular agriculture, stem cell differentiation, cancer drug discovery, and tissue engineering.

Precision Medicine and Cancer Therapy: The research team led by Research Associate Dr Govindaraj is proving to be pivotal in developing high-throughput screening methods for precision cancer therapy in South Africa.

Collectively, these research efforts underscore RUBIC's commitment to practical and impactful biotechnological advancements. The Centre's innovative projects and collaborative spirit drive transformative progress across multiple disciplines, contributing to the global advancement of biotechnology.



Biotechnology and the Biotechnology Innovation Centre (RUBIC)

Books/Chapters/Monographs

Fogel, R., Shaw, L., and Limson, J.L.
Fogel, R., Shaw, L., and Limson, J.L. (2023). Aptamers as Versatile Tools for Expanding the Scope of Sensors. In: Narayan, R. (Ed.), *Encyclopedia of Sensors and Biosensors*, vol. 3. Elsevier, pp. 352-374. <https://doi.org/10.1016/B978-0-12-822548-6.00114-X>

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Chauhan, R.
Alake, J., Nate, Z., Adu, D., Ike, B.W., **Chauhan, R.**, Mokoena, S., Mahlalela, M.C., Mohite, S.B. and Karpoomath, R. (2023) Fabrication of a simple and sensitive mitoxantrone electrochemical sensor based on topdown recycling of iron wool and tissue paper. *Materials Today Communications*. 36 (2023). p.1-11.

Chauhan, R., Fogel, R. and Limson, J.L.
Chauhan, R., Fogel, R. and Limson, J.L. (2023) Nanopore MinION Sequencing Generates a White Spot Syndrome Virus Genome from a Pooled Cloacal Swab Sample of Domestic Chickens in South Africa. *Microorganisms*. 11 (11). p.1-17.

Chauhan, R., Fogel, R. and Limson, J.L. (2023) Overview of Diagnostic Methods, Disease Prevalence and Transmission of Mpox (Formerly Monkeypox) in Humans and Animal Reservoirs. *Microorganisms*. 11 (5). p.1-31.

Fanucci, S., and Prinsloo, E.
Fanucci, S., and Prinsloo, E. (2023). Development of a low-cost hydrogel microextrusion printer based on a Kossel delta 3D printer platform. *Engineering Reports*. 5(12), e12615.

Govindaraj, D.B.T.
Malise, T.T.T., Nweke, E.E., Takundwa, M.M., Fonteh Fru, P. and **Govindaraj, D.B.T.** (2023) Treatment Strategies for Multiple Myeloma Treatment and the Role of High-Throughput Screening for Precision Cancer Therapy. *Advances in Experimental Medicine and Biology*. 1436 (2023). p.1-11.

Kenmogne, L.V., Nweke, E.E., Takundwa, M.M., Fru, P.N. and **Govindaraj, D.B.T.** (2023) Application of Drug Repurposing-Based Precision Medicine Platform for Leukaemia Patient Treatment. *Advances in Experimental Medicine and Biology*. 19 (2023). p.115-126.

Woldekidan, H.B., Woldesemayat, A.A., Adam, G., Tafesse, M. and **Govindaraj, D.B.T.** (2023) Aptamer-Based Tumor-Targeted Diagnosis and Drug Delivery. *Advances in Experimental Medicine and Biology*. 1409 (2023). p.173-192.

Hamese, S. and Prinsloo, E.
Hamese, S., Mugwanda, K., Takundwa, M.M., Prinsloo, E. and Govindaraj, D.B.T. (2023) Recent advances in genome annotation and synthetic biology for the development of microbial chassis. *Journal of Genetic Engineering and Biotechnology*. 21 (156). p.1-9.

Hamese, S., Prinsloo, E. and Govindaraj, D.B.T.
Mugwanda, K., **Hamese, S.**, Van Zyl, W.F., **Prinsloo, E.**, Du Plessis, M., Dicks, L.M.T. and **Govindaraj, D.B.T.** (2023) Recent advances in genetic tools for engineering probiotic lactic acid bacteria. *Bioscience Reports*. 43 (1). p.1-27.

Iheanetu, C.U.
Iheanetu, C.U., Tamasová, V. and Tandlich, R. (2023) Simile on sense of self, virocell and the COVID19 pandemic. *Academicus International Scientific Journal*. 2023 (2023). p.29-58.



Women in science. *From left to right:* Professor Janice Limson, Shannon Rutherford, Tasmita Singh, Lwazikazi Madikiza, Khanyisile Nkosi and Michaela Davies.

Photo: RUBIC.



From left to right: Taweneko Mwale, Ilse de Vos, Dr Rose Kadye, Yamnkela Manana, Heidi Böttcher, Professor Earl Prinsloo and Oratile Makhafula.

Photo: RUBIC.

Jamabo, M., Mahlalela, M.E. and Boshoff, A.

Jamabo, M., Mahlalela, M.E., Edkins, A.L. and Boshoff, A. (2023) Tackling sleeping sickness: current and promising therapeutics and treatment strategies. *International Journal of Molecular Sciences*. 24 (15). p.1-30.

Joos-Vandewalle, J. and Prinsloo, E.

Joos-Vandewalle, J., Steenkamp, V. and Prinsloo, E. (2023) A simplified workflow with end-point validation of real-time electrical cell-substrate impedance sensing of retinoic acid stimulated neurogenesis in human SH-SY5Y cells *in vitro*. *BMC Research Notes*. 16 (2023). p.1-9.

Limson, J.L.

Cabezas, A., Cercado, B., Chouchane, H., Corton, B., Gomaa, O., Harnisch, F., **Limson, J.L.**, Spiller, V.R. and Vargas, I. (2023) Microbial electrochemistry and technology capacity building challenges - focus on Latin America & Caribbean and Africa. *Journal of Solid State Electrochemistry*. 2023 (2023). p.1-17.

Prinsloo, E.

Nwahara, N., Abrahams, G.L., Mack, J., Prinsloo, E. and Nyokong, T. (2023) A hypoxia responsive silicon phthalocyanine containing naphthquinone axial ligands for photodynamic therapy activity. *Journal of Inorganic Biochemistry*. 239 (2023). p.1-11.

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Limson, J.L.

Limson, J.L. and Nqowana, T. Presenter. Enhancing agency around water treatment and monitoring in remote communities: a case study of citizen science in the Amakhala Game reserve in South Africa. *17th Public Communication of Science and Technology Conference*. Rotterdam, Netherlands. April 2023.

Accone, T., Limson, J.L., Lui, N., and Vincent, N.

Accone, T., Limson, J.L., Lui, N., and Vincent, N. Presenters. Lab to Life: Social Impact-Driven Biotechnology. *Sydney SXSW*. Sydney, Australia. October 2023.

Limson, J., McKinnon, M., Schoon, A. and Peschke, L.

Limson, J., McKinnon, M., Schoon, A. and Peschke, L. Presenters. Roundtable: Involving journalists in science engagement between communities and scientists. Chaired by J. Limson and Co-Chair: M.

McKinnon. *17th Public Communication of Science and Technology Conference*. Rotterdam, Rotterdam, Netherlands. April 2023.

Khumalo, L.

Khumalo, L. and Limson, J. Presenter. Insight Talks: Progression from deficit to dialogue models of science communication: Lessons and opportunities from Biotechnology science innovation. *17th Public Communication of Science and Technology Conference*. Rotterdam, Rotterdam, Netherlands. April 2023.

Chauhan, R., Fogel, R. and Limson, J.L.

Chauhan, R., Fogel, R. and Limson, J.L. Electrochemical characterization of Carbon black in different redox probes and their application. *6th International Symposium on Electrochemistry - Electrochemistry, Meeting Societal Needs*. Johannesburg. South Africa. April 2023.

Short Documentaries

Limson, J.L.

Nqowana, T., K. Blaauw., N. Mchunu and **Limson, J.L.** *Engaging communities in remote villages on water testing challenges*. Published/produced: 2023.

Limson, J.L.

Mchunu, N., Blaauw, K., **Schoon, A. and Limson, J.L.** *The role of journalists in mediating conversations between scientists and sugarcane growers about a new GM sugarcane*. Published/produced: 2022.

Patents

Shaw L., Fogel, R. and Limson, J.L.

Shaw Epitope-specific hCG binding aptamers and applications thereof, **Shaw L., Fogel, R. and Limson, J.L.**, Rhodes University. Official Grant Number: PCT/IB2023/055684 Application type: PCT Application. Filed on date: 02/06/2022 Region: not identified yet Status: Pending.

Fellows T., Fogel, R. and Limson, J.L.

CD4 binding aptamers and applications thereof, **Fellows, T., Fogel, R. and Limson, J.L.**, Rhodes University, ZA Patent application No. PENDING. Status: Filed, 3 December 2022. USA.

DEPARTMENT OF Botany



Associate Professor Craig Peter
Head of Department

Introduction

Professor Brad Ripley led a group from Rhodes (with **Dr Tiffany Pillay**, **Professor Susi Vetter**, and PhD candidate **Edith Singini**) in completing analyses of material harvest from a NERC [Natural Environment Research Council] and DSI [Department of Science and Innovation] funded project on the responses of encroaching and non-encroaching acacia species to elevated CO₂ (eCO₂), drought and grass competition. The project is a collaboration of Rhodes University with Sheffield University, the University of Edinburgh, and the University of Cape Town and has generated one of the most comprehensive data bases of savanna seeding traits including physiological, hydraulic, growth, soil and nutrient data.

In December 2023, Professor Ripley, Dr Pillay, Professor Vetter and Ms Singini joined the other collaborators at a week-long meeting to present and discuss preliminary results, interact with vegetation modellers, and to plan research outputs. These data will be used by the collaborating partners to craft no less than ten (10) planned publications.

Professor Ripley and his team at the Rhodes University Elevated CO₂ Facility (RUECF) designed and started setting up a follow-up experiment based on the NERC project looking at the interaction of eCO₂ and nutrient supply on encroaching and non-encroaching savanna species, expanding the range of woody species to non-acacias and investigating the effect of nutrient supply.

Dr Tiffany Pillay and Professor Brad Ripley hosted a workshop on the use of stable light isotopes in Ecology, which was held at the iThemba Laboratories for Accelerator Based Science (LABS) in Johannesburg. iThemba LABS is a business unit of the National Research Foundation (NRF). The workshop, which was attended by fifteen (15) academic researchers and students from around South Africa, aimed to share ideas and best practices on the use of isotopes in ecological studies and included talks by Dr Stephan Woodborne (iThemba's Senior Accelerator Mass Spectrometry Scientist) and Professor Adam West (Plant Ecophysiologicalist at University of Cape Town).



*Above: Fire Management workshop at Tswalu Game Reserve.
Right: The first prescribed burn at Tswalu Game Reserve.
Photos: Department of Botany.*

Professor Vetter and Dr Pillay continued their research into the fire ecology of arid savannas at Tswalu Kalahari Reserve. The research aims to understand the interacting effects of fire and rainfall variation on the vegetation dynamics of this important ecosystem which is predicted to become a climate change hotspot. In November 2023 they held a successful fire management workshop at Tswalu that culminated in applying the first-ever controlled burn in the reserve.

Following two visits to Bayreuth in 2022, Professor Vetter was invited in 2023 to join colleagues from Bayreuth University (Germany), Rhodes University, University Joseph Ki-Zerbo (Burkina Faso), Moi University (Kenya) and University of Lagos (Nigeria) to prepare a proposal for the next phase of the Africa Multiple Cluster of Excellence and to help develop a new thematic area on "Ecologies".

Dr Ethan Newman obtained a STINT grant from the Swedish Government to collaborate with Nina Sletvold and Jon Agren on pollinator mediated selection research in South Africa. They arrive for field work in September 2024.

In 2023, **Associate Professor Craig Peter's** long running collaboration to build a global database of orchid-pollinator



interactions came to fruition. Together with researchers from China, North and South America, Australia and Europe, they synthesised all published information about the pollination of orchid species since the original work of Charles Darwin. This work shows that in the ~150 years since Darwin, pollinators have been documented for 2900 orchid species, around ten percent of what is one of the two largest families of flowering plants.

Finally, we congratulate **Dr Hannah Butler**, a Postdoctoral Fellow in our Department, who received the South African Association of Botanists, bronze medal for the best PhD thesis in South Africa in 2023.

Books/Chapters/Monographs

Coetzee, J.A.

Madzivanzira, T.C., Coetzee, J.A. and Dalu, T. (2023) Factors Structuring Aquatic Macrophytes. In: Kumar, S., Baudth, K., Singh, R., Kumar, N. and Kumar, R. (eds.). *Aquatic Macrophytes: Ecology, Functions and Services*. Singapore: Springer Singapore. p.21-52. ISBN: 9789819938216.

Peer Reviewed Subsidy-Earning Journal Research Publications

Coetzee, J.A.

Paterson, I.D., Motitsoe, S.N., Coetzee, J.A. and Hill, M.P. (2023) Recent post-release evaluations of weed biocontrol programmes in South Africa: a summary of what has been achieved and what can be improved. *BioControl*. 2023 (2023). p.1-13.

Vermaat, J.E., Thiemer, K., Immerzeel, B., Schneider, S.C., Sebola, K.M., Coetzee, J.A., Petruzzella, A., Motitsoe, S.N., Baldo, M., Misteli, B. and et al. (2023) Mass development of aquatic plants: Effects of contrasting management scenarios on a suite of ecosystem services. *Journal of Applied Ecology*. 00 (00). p.1-14.

Britton, J.R., Lynch, A.J., Bardal, H., Bradbeer, S.J., Coetzee, J.A., Coughlan, N.E., Dalu, T., Tricarico, E., Gallardo, B., Lintermans, M., Lucy, F., Liu, C., Olden, J.D., Raghavan, R. and Pritchard, E.G. (2023) Preventing and controlling non-native species invasions to bend the curve of global freshwater biodiversity loss. *Environmental Reviews*. 31 (2). p.310-326.

Gervazoni, P., Minuti, G.M., Fuentes-Rodríguez, D., Coetzee, J.A., Sosa, A., Sabater, L. and Franceschini, C. (2023) Citizen Science Improves the Known and Potential Distribution of a Strong Wetland Invader: Implications for Niche Modeling and Invasion Management. *Environmental Management*. 71 (2023). p.1176-1187.

Nqayi, S.B., Zachariades, C., Coetzee, J.A., Hill, M.P., Chidawanyika, F., Uyi, O. and McConnachie, A. (2023) Do thermal requirements of *Dichrorampha odorata*, a shoot-boring moth for the biological control of *Chromolaena odorata*, explain its failure to establish in South Africa? *African Entomology*. 31 (2023). p.1-10.

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Reid, M.K., Hill, M.P. and Coetzee, J.A. (2023) Love at first bite? Pre-release surveys reveal a novel association between a native weevil and the invasive *Nymphaea Mexicana Zuccarini* (Nymphaeaceae) in South Africa. *African Entomology*. 31 (2023). p.1-8.

Misteli, B., Pannard, A., Aasland, E., Harpenslager, S.F., Motitsoe, S.N., Thierner, K., Llopis, S., Coetzee, J.A., Hilt, S., Kohler, J., Schneider, S., Piscart, C. and Thiebaut, G. (2023) Short-term effects of macrophyte removal on aquatic biodiversity in rivers and lakes. *Environmental Management*. 325 (2023). p.1-10.

Van Steenderen, C.J.M., Sutton, G.F., Owen, C.A., Martin, G.D. and Coetzee, J.A. (2023) Sample size assessments for thermal physiology studies: An R package and R Shiny application. *Physiological Entomology*. 2023 (July). p.1-9.

Reid, M.K., Paterson, I.D., Coetzee, J.A., Gettys, L. and Hill, M.P. (2023) Know thy enemy: investigating genetic contributions from putative parents of invasive *Nymphaea mexicana* hybrids in South Africa as part of efforts to develop biological control. *Biological Control*. 184 (105291). p.1-11.

Mnciva, S.T., Coombes, C.A. and Coetzee, J.A. (2023) Morphological and molecular characterisation of naturally occurring pathogenic fungi for *Pontederia crassipes* (water hyacinth) in South Africa. *Biocontrol Science and Technology*. 33 (9). p.869-884.

Franceschini, M.C., Hill, M.P., Fuentes-Rodríguez, D., Gervazoni, P.B., Sabater, L.M. and Coetzee, J.A. (2023) Performance and field host range of the life stages of *Cornops aquaticum*, a biological control agent of water hyacinth. *Entomologia Experimentalis et Applicata*. 171 (12). p.1-11.

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Drone imagery and experimental burn plot at Tswalu Game Reserve.

Photo: Department of Botany.

Miller, B.E., Coetzee, J.A. and Hill, M.P. (2023) Evaluating the establishment of a new water hyacinth biological control agent in South Africa. *African Entomology*. 31 (2023). p.1-7.

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Martinez-Azorin, M., Dold, A.P., Crespo, M.B. and Vargas, M.A.A. (2023) *Austronea oblongifolia* (Hyacinthaceae subfam. Urgineoideae), a new species from the Eastern Cape Province in South Africa. *Phytotaxa*. 585 (1). p.48-54.

McKenzie, R.J. and Dold, A.P. (2023) Lectotypification of *Othonna crassifolia* Harv., a replaced synonym of *Crassothonna capensis* (Asteraceae, Senecioneae). *Phytotaxa*. 618 (3). p.296-300.

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Theron, G.L., Anderson, B., Cozien, R.J., Ellis, A.G., Grenier, F., Johnson, S.D., Newman, E.L., Pauw, A. and van der Niet, T. (2023) We don't know the half of it: morphological and molecular evidence reveal dramatic underestimation of diversity in a key pollinator group (Nemestrinidae). *Invertebrate Systematics*. 37 (1). p.1-13.

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Ackerman, J.D., Phillips, R.D., Tremblay, R.L., Karremans, A., Reiter, N., Peter, C.I., Bogarin, D., Perez-Escobar, O.A. and Liu, H. (2023) Beyond the various contrivances by which orchids are pollinated: global patterns in orchid pollination biology. *Botanical Journal of the Linnean Society*. 202 (3). p.295-324.

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Raubenheimer, S.L. and Coetzee, J.A.

Paper, M.K., Righetti, T., Raubenheimer, S.L., Coetzee, J.A., Sosa, A. and Hill, M.P. (2023) Effects of elevated CO₂ on feeding responses of biological control agents of *Pontederia crassipes*. *Entomologia Experimentalis et Applicata*. (2023). p.998-1008.

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Singini, E.J.

Singini, E.J., Nuapia, Y., Chimuka, L. and Risenga, I.M. (2023) The effect of elevated temperatures on trichomes, essential oil composition and yield of *Lippia javanica*: A chemometric approach. *South African Journal of Science*. 119 (1-2). p.1-6.

Vetter, S.

Moller, V., Cocks, M. and Vetter, S. (2023) Nature-Connectedness and well-being experienced during best and worst times of life: A case for safeguarding biocultural diversity. *Social Indicators Research*. 165 (2023). p.1053-1089.

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Dr Pillay and PhD candidate Bridgette McMilan burying soil probes at Tswalu Game Reserve.

Photo: Department of Botany.

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Butler, H.C.

Butler, H.C. and Johnson, S.D. Evidence for sunbird pollination in African bloodlilies: *Haemanthus* (Amaryllidaceae). *SAAB Postgraduate Symposium 2023*. Virtual Meeting. South Africa. September 2023.

Khoury, K.L. and Newman, E.L.

Khoury, K.L. and Newman, E.L. Disentangling pollination-efficacy and its role in maintaining subspecies boundaries in an African Storks-bill. *SAAB Postgraduate Symposium 2023*. Virtual meeting. South Africa. September 2023.

Khoza, M.R. and Vetter, S.

Khoza, M.R. and Vetter, S. Thicket expansion in savannas is characterised by critical thresholds affecting the herbaceous layer. *58th Annual Congress of the Grassland Society of Southern Africa*. Buffelspoort ATKV Resort, Rustenburg. South Africa. July 2023.

Moir, M.R.G., Butler, H.C., Peter, C.I. and Newman, E.L.

Moir, M.R.G., Butler, H.C., Peter, C.I. and Newman, E.L. Geographic variation in pollinator importance drives floral ecotype formation in *Brunsvigia gregaria* (Amaryllidaceae). *SAAB Postgraduate Symposium 2023*. Virtual Meeting, Online. South Africa. September 2023.

Nell, R., Pillay, T. and Vetter, S.

Nell, R., Pillay, T. and Vetter, S. Reconstructing thicket clump formation in savannas using Association Rules Analysis. *British Ecological Society. ICC Belfast*, Belfast. Northern Ireland. December 2023.

Reynolds, L.M., Pillay, T. and Ripley, B.S.

Reynolds, L.M., Pillay, T. and Ripley, B.S. Encroaching species are stronger anisohydric "water spenders" under elevated CO₂ conditions: Implications for savanna seedling establishment rates. *Isotopes in Ecology*. iThemba LABS, Johannesburg. South Africa. June 2023.

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Vetter, S. and Muasya, M. Floristic relationships between subtropical thicket, forest, savanna, and other biomes in South Africa. *Thicket Forum*. Addo Elephant National Park, Addo. South Africa. June 2023.

DEPARTMENT OF Chemistry



Associate Professor Rosalyn Klein
Head of Department



Introduction

There are a range of research areas active in the Department of Chemistry that match the broad range of expertise of staff, but which also reflect collaborations between researchers. The success of the Department is largely due to the collaborations between teams of researchers and their students - often with complementary skills and knowledge. This is supported by the state-of-the-art instrumentation within the Department, and the various technical staff who keep it all running. We owe a particular debt of gratitude to our support staff who help us carve out time to work closely with students from final year undergraduates through to Doctoral researchers.

The general research areas, together with associated staff, are as follows:

Supramolecular Materials Laboratory

(Professor Rui Krause, Dr Vincent Smith and Dr Theodore Geswindt)

This group studies all aspects of solid and liquid states, including interactions, using a range of analyses such as XRD, NMR and MS. The focus is on drug development, quantitation, analysis and delivery in the context of TB and other microbial diseases. Various approaches are used, ranging from natural products and current drugs in clinical use, to novel nanostructures deployed in drug delivery. Greener methods such as mechanochemistry and employment of supercritical carbon dioxide make this team a particularly exciting team to watch!

Biosensors and Nanostructures

(Professor Philani Mashazi)

This research (led by the Deputy Director of the Rhodes/DSI Institute for Nanotechnology Innovation) focuses on integrating biological molecules with nanostructures for novel sensor applications, particularly for the early detection and diagnosis of diseases.

Green Chemistry in Drug Discovery

(Professor Rosa Klein)

This research focuses on new green synthetic procedures which are then used to produce biologically active compounds as potential therapeutics for a range of diseases.

Computational Mechanistic Chemistry and Drug Discovery

(Dr Tendamudzimu Tshiwawa and Professor Kevin Lobb)

The work in this group focuses on computational chemistry (with calculations being performed on the CHPC Iengau Super-computer) in areas such as computation mechanistic chemistry, and the energetics of reactions, and drug discovery where new strategies are studied for the potential treatment of a range of diseases.

Functional Liquid Crystalline Materials for Energy Applications

(Dr Mpondi Molefe)

This group focuses on organic-inorganic liquid crystalline ligands, metal-containing liquid crystals and metallomesogens for solar energy applications.

T&L and CE Research

(Ms Joyce Sewry)

Through Ms Joyce Sewry, the Department has several research initiatives both in Teaching and Learning, and in Community Engagement research.

Postgraduates / Graduations

Our graduate students continue to shine inside and outside the laboratory in many ways. Enrollment and graduation of Postgraduates has slowed in recent years - reflecting changes in funding models for bursaries and global shifts in education corresponding to recovery from the COVID pandemic, but the quality of research and the quality of the graduates has not faltered.

Mofeli Leoma (supervised by Dr Tshiwawa), who graduated in October 2023 with his thesis title: *New insights into the squalene monooxygenase inhibitors for lowering cholesterol in cardiovascular biology with the aid of computational methods*, started the year off by winning the poster competition at the South African Chemical Institute National Convention in Stellenbosch.

In April 2023 we had several Postgraduates graduate alongside the undergraduates, including **Kristen Burgess** (supervised by **Distinguished Professor Tebello Nyokong** and **Professor John Mack**), who was selected for the illustrious Gates Cambridge scholarship. Burgess has since departed our shores as part of the Gates Cambridge Class of 2023, comprised of seventy-seven (77) outstanding new scholars from around the world.

In our October 2023 graduation we saw fourteen (14) Doctoral graduates earn their red gowns - including **Sodeeq Salami** (Professor Krause) and **Urbain Ndagano** (Professor Klein) graduating in Green Chemistry and moving on to Postdoctoral Fellowships in Europe. We also saw seven (7) Masters graduates cross the stage, including five (5) graduating with distinction and one (1) with a Masters in Education.

In December **Jones Rambau** (an Honours student) came second in the student poster competition at the Frank Warren Organic Chemistry conference in Limpopo.

Distinguished Visitors / International Visits

The Department of Chemistry experienced a relatively quiet year, only welcoming one (1) visitor to visit us during this period of upheaval resulting from our building being renovated. Dr Oguymi Oderinlo joined us from the Federal University of Otuoke in Nigeria to develop a collaboration with Dr Tshiwawa in recognition of her expertise in computer modelling of organic reactions.

The Institute for Nanotechnology Innovation enjoyed visits from several students and interns as part of various collaborations.

Significant Research Aligned Events

Also in recognition of her rising status in the Computational Chemistry community, Dr Tshiwawa was invited by Krishna Govender (Chairperson of SACI - molecular modelling division) to give a public lecture on the advances made in computational chemistry in her research group, to the South African Chemical Institute molecular modelling division.

Books/Chapters/Monographs

Nnaji, N.J.

Nnaji, N.J., Mbah, P.C. and Ebenso, E. (2023) The role of vegetable tannins in metal corrosion inhibition *vis-à-vis* agricultural wastes. In: Verma, C., Srivastava, V., Quadri, T.W., Hussain, C.M. and Ebenso, E.E. (eds.). *Smart Anticorrosive Materials, Trends and Opportunities*. The Netherlands: Elsevier Ltd. p.401-420. ISBN: 9780323951586.

Nnaji, N.J., Soy, R.C., Openda, Y.I. and Nyokong, T.

Nnaji, N.J., Soy, R.C., Openda, Y.I. and Nyokong, T. (2023) Phthalocyanines as corrosion inhibitors. In: Verma, C., Srivastava, V., Quadri, T.W., Hussain, C.M. and Ebenso, E.E. (eds.). *Smart Anticorrosive Materials, Trends and Opportunities*. The Netherlands: Elsevier Ltd. p.365-400. ISBN: 9780323951586.

Sicwetsha, S., Mvango, S., Nyokong, T. and Mashazi, P.N.

Sicwetsha, S., Mvango, S., Nyokong, T. and Mashazi, P.N. (2023) Effective ROS generation and morphological effect of copper oxide nanoparticles as catalysts. In: Diallo, M.S. and Abdelkef, A. (eds.). *Nanotechnology Convergence in Africa*. Netherlands: Springer. p.77-94. ISBN: 9789402421934.

Concerts, Exhibitions, Performances, Workshops, Events

Benise, E., Mpeta, L.S. and Nyokong, T.

Benise, E., Mpeta, L.S. and Nyokong, T. Oral Presentation. Co phthalocyanine-exfoliated graphite composite for the electrocatalytic detection of prostate specific antigen using an aptamer. *DSI/Mintek Nanotechnology Innovation Centre (NIC) Annual Workshop*. South African Medical Research Council (MRC), Cape Town. South Africa. 11 - 12 October 2023.

Jokazi, M. and Nyokong, T.

Jokazi, M. and Nyokong, T. Oral Presentation. The effect of TiO₂ nanoparticles on the catalytic activity of a porphyrin towards electrochemical sensing and photoelectrodegradation of pentachlorophenol. *DSI/Mintek Nanotechnology Innovation Centre (NIC) Annual Workshop*. South African Medical Research Council (MRC), Cape Town. South Africa. 11 - 12 October 2023.

Mack, J., Babu, B., Molupe, N., Dingiswayo, S. and Nyokong, T. Mack, J., Babu, B., Molupe, N., Dingiswayo, S. and Nyokong, T. Invited Speaker. Coordinated Porphyrinoids as Photosensitizers for Photodynamic Anticancer and Antimicrobial Chemotherapy. *2nd BRICS Workshop on Biophotonics*. N/A - via zoom, Saratov. Russia. 16 - 18 May 2023.

Magaela, N.B. and Nyokong, T.

Magaela, N.B., Managa, M.E. and Nyokong, T. Oral Presentation. The synthesis of 5,10,15,20-tetra pentafluorophenyl porphyrin loaded onto spermine modified carbon nanospheres for enhanced cancer selectivity, in photodynamic therapy. *DSI/Mintek Nanotechnology Innovation Centre (NIC) Annual Workshop*. South African Medical Research Council (MRC), Cape Town. South Africa. 11 - 12 October 2023.

Morale, M., Luhana, C.B. and Mashazi, P.N.

Morale, M., Luhana, C.B. and Mashazi, P.N. Poster presentation. Fabrication of conjugated films for enhanced conductivity and electron transfer using azacoronene and cobalt phthalocyanines. *DSI/Mintek Nanotechnology Innovation Centre (NIC) Annual Workshop*. South African Medical Research Council (MRC), Cape Town. South Africa. 11 - 13 October 2023.

Oyim, J.O., Jokazi, M., Mack, J. and Nyokong, T.

Oyim, J.O., Jokazi, M., Mack, J. and Nyokong, T. Oral Presentation. Tuning Colloidal Activated Carbon with Porphyrins for Enhanced Photocatalytic Effect. *DSI/Mintek Nanotechnology Innovation Centre (NIC) Annual Workshop*. South African Medical Research Council (MRC), Cape Town. South Africa. 11 - 12 October 2023.

Sabasaba, S., Britton, J. and Nyokong, T.

Sabasaba, S., Britton, J. and Nyokong, T. Poster presentation. Synthesis of asymmetric phthalocyanines for use in dye-sensitized

solar cells. *DSI/Mintek Nanotechnology Innovation Centre (NIC) Annual Workshop*. South African Medical Research Council (MRC), Cape Town. South Africa. 11 - 12 October 2023.

Samuel, Z., Jokazi, M., Nwahara, N. and Nyokong, T.

Samuel, Z., Jokazi, M., Nwahara, N. and Nyokong, T. Oral Presentation. TiO₂ nanoparticles functionalized with a porphyrin for electrochemical sensing of pesticides. *DSI/Mintek Nanotechnology Innovation Centre (NIC) Annual Workshop*. South African Medical Research Council (MRC), Cape Town. South Africa. 11 - 12 October 2023.

Sekeleme, S.E., Macigane, P.R., Mack, J. and Nyokong, T.

Sekeleme, S.E., Macigane, P.R., Mack, J. and Nyokong, T. Poster presentation. 4-Bromo-thien-2-yl-substituted porphyrin, chlorin and bacteriochlorin photosensitizer dyes and their gold nanoparticle conjugates for photodynamic antimicrobial chemotherapy. *DSI/Mintek Nanotechnology Innovation Centre (NIC) Annual Workshop*. South African Medical Research Council (MRC), Cape Town. South Africa. 11 - 12 October 2023.

Sewpersad, N. and Nyokong, T.

Sewpersad, N. and Nyokong, T. Oral Presentation. Photodynamic antibacterial activities of porphyrins against *Staphylococcus aureus*. *DSI/Mintek Nanotechnology Innovation Centre (NIC) Annual Workshop*. South African Medical Research Council (MRC), Cape Town. South Africa. 11 - 12 October 2023.

Distinguished Visitors

Akwesi, N.C.

Mr N.C. Akwesi. University of Kinshasa, Kinshasa, Democratic Republic of Congo. *Research Collaboration between SA and DRC (CSIR/ALC Grant)*. October 2023.

Bakasa, C.

Ms C. Bakasa. United States International University, Nairobi, Kenya. *Research Collaboration*. September 2023.

Bomanda, T.

Mr T. Bomanda. University of Kinshasa, Kinshasa, Democratic Republic of Congo. *Research Collaboration - CSIR/ALC Grant*. January 2023.

Finogenov, D.

Mr D. Finogenov. Ivanovo State University of Chemistry and Technology, Ivanovo, Russia. *Research Collaboration/Internship*. November 2023.

Kabeya, G.H.

Mr GH Kabeya. University of Kinshasa, Kinshasa, Democratic Republic of Congo. *Research Collaboration between SA and DRC (CSIR/ALC Grant)*. November 2023.

Ngoy, B.P.

Ngoy, B.P. University of Kinshasa, Kinshasa, Democratic Republic of Congo. *Research Collaboration between SA and DRC (CSIR/ALC Grant)*. October 2023.

Omondi, R.

Dr R Omondi. University of Cape Town, Cape Town, South Africa. *Research Collaboration*. June 2023.

Sikhwivhilu, L. and Ntsendwana, B.

Professor L Sikhwivhilu and Dr B Ntsendwana. Mintek, Johannesburg, South Africa. *Discussions with Mintek/NIC funded students and staff (part of a courtesy visit by sponsors)*. September 2023.

Sikhwivhilu, L., Maserumule, C., Sikhwivhilu, K., Teboho, T. and Ntsendwana, B.

Professor L. Sikhwivhilu, Dr C. Maserumule, Dr K. Sikhwivhilu, Professor T. Teboho and Dr B. Ntsendwana. Mintek, Johannesburg, South Africa. *Discussions with Mintek/NIC funded students and staff (part of a courtesy visit by sponsors)*. March 2023.

Peer Reviewed Subsidy-Earning Journal Research Publications

Adeniyi, O.K., Nwahara, N., Mwanza, D., Nyokong, T. and Mashazi, P.N.

Adeniyi, O.K., Nwahara, N., Mwanza, D., Nyokong, T. and Mashazi, P.N. (2023) High-performance non-enzymatic glucose sensing on nanocomposite electrocatalysts of nickel phthalocyanine nanorods and nitrogen doped-reduced graphene oxide nanosheets. *Applied Surface Science*. 609 (2023). p.1-13.

Adesina, A.O., Adeniyi, O.K. and Mashazi, P.N.

Adesina, A.O., Adeniyi, O.K. and Mashazi, P.N. (2023) Online regeneration of a piezoelectric and impedimetric immunosensor for

the detection of C-reactive protein on the oriented antibody gold surface. *Analytical Methods*. 15 (2023). p.1157-1167.

Babu, B., Mack, J. and Nyokong, T.
Babu, B., Mack, J. and Nyokong, T. (2023) Sn(IV)-porphyrinoids for photodynamic anticancer and antimicrobial chemotherapy. *Dalton Transactions*. 52 (2023). p.5000-5018.

Benise, E. and Nyokong, T.
Benise, E. and Nyokong, T. (2023) Electrochemical detection of prostate specific antigen in the presence of an aptamer and composites of cobalt phthalocyanine-exfoliated graphite. *Polyhedron*. 246 (2023). p.1-10.

Centane, S. and Nyokong, T.
Centane, S. and Nyokong, T. (2023) Co phthalocyanine mediated electrochemical detection of the HER2 in the presence of Au and CeO nanoparticles and graphene quantum dots. *Bioelectrochemistry*. 149 (2023). p.1-12.

Centane, S., Mgidlana, S., Openda, Y.I. and Nyokong, T.
Centane, S., Mgidlana, S., Openda, Y.I. and Nyokong, T. (2023) Single vs sandwich aptamers: Towards the detection of human epidermal growth factor receptor 2 using composites of phthalocyanine and nanoparticles. *Bioelectrochemistry*. 153 (2023). p.1-14.

Centane, S., Mgidlana, S., Openda, Y.I., Ndebele, N. and Nyokong, T.
Centane, S., Mgidlana, S., Openda, Y.I., Ndebele, N. and Nyokong, T. (2023) Effect of symmetry and substituents of cobalt based phthalocyanines in aptasensor design for the electrochemical impedimetric detection of the human epidermal growth factor receptor 2. *Journal of Electroanalytical Chemistry*. 941 (2023). p.1-11.

Chavalala, R.N. and Mashazi, P.N.
Chavalala, R.N. and Mashazi, P.N. (2023) Au/Pd Nanocatalysts on Silica Nanoparticle-Coated Indium Tin Oxide for Colorimetric Sensing of Ascorbic Acid. *ACS Applied Nano Materials*. 61 (1). p.190-199.

Davies-Coleman, M.T.
Davies-Coleman, M.T., McPhail, K.L. and Parker-Nance, S. (2023) A Quarter Century of Marine Biodiscovery in Algoa Bay, South Africa. *Journal of natural products*. 86 (3). p.473-652.

Dingiswayo, S., Babu, B., Burgess, K.P., Mack, J. and Nyokong, T.
Dingiswayo, S., Babu, B., Burgess, K.P., Mack, J. and Nyokong, T. (2023) Photodynamic Anticancer and Antibacterial Activities of Sn(IV) N-Confused Meso-tetra(methylthiophenyl)porphyrin. *Photochem*. 3 (3). p.313-326.

Hlabangwane, K.S., Matshitse, R. and Nyokong, T.
Hlabangwane, K.S., Matshitse, R., Managa, M.E. and Nyokong, T. (2023) The application of Sn(IV)Cl₂ and In(III)Cl porphyrin-dyed TiO₂ nanofibers in photodynamic antimicrobial chemotherapy for bacterial inactivation in water. *Photodiagnosis and Photodynamic Therapy*. 44 (2023). p.1-9.

Hulushe, S.T. and Watkins, G.M.
Hulushe, S.T., Malan, F.P., Hosten, E.C., Akerman, M.P., Lemmerer, A., Khanye, S.D. and Watkins, G.M. (2023) Cation-/Ligand-Induced Solvent-Assisted Transformations of Zn(II) and Cu(II) Complexes Featuring Single-Pocket Multidentate Chelating Members. *Crystal Growth & Design*. 23 (7). p.4836-4854.

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Isamura, B.K.I. and Popelier, P.L.A. (2023) Toward a simple yet efficient cost function for the optimization of Gaussian process regression model hyperparameters. *AIP Advances*. 13 (9). p.1-21.

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Jokazi, M. and Nyokong, T. (2023) Electrochemical Sensing and Photoelectrodegradation of Pentachlorophenol using Co-, Mn- and

Zn-Porphyrins. *ChemElectroChem*. 11 (2). p.1-16.

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Karunganathan, S., Isamura, B.K.I. and Krause, R.W.M. (2023) Exploring the antioxidant, antimicrobial, cytotoxic and biothermodynamic properties of novel morpholine derivative bioactive Mn(II), Co(II) and Ni(II) complexes - combined experimental and theoretical measurements towards DNA/BSA/ SARS-CoV-2 3CLPro. *RSC Medicinal Chemistry*. 14 (9). p.1667-1697.

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Kisula, L., Siwe-Noundou, X., Swart, T., Hoppe, H.C., Mgani, Q.A. and Krause, R.W.M. (2023) Synthesis, Molecular Docking Analysis and In vitro Evaluation of 1,4- Dihydroxyanthraquinone Derivatives As Anti-Trypanosomal Agents. *Letters in Organic Chemistry*. 20 (6). p.507-518.

Krause, R.W.M.
Dlamini, Z.W., Setlaleto, W., Vallabhapurapu, S., Mahule, T.S., Vallabhapurapu, S.V., Daramola, O.A., Tseki, P.F., Siwe Noundou, X. and Krause, R.W.M. (2023) Resistive switching properties of CdTe/CdSe core-shell quantum dots incorporated organic cow milk for memory application. *Functional Materials Letters*. 16 (7). p.1-10.

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Da Silva, D.R.C., Mapukata, S., Currie, S., Kitos, A.A., Lanterna, A.E., Nyokong, T. and Scaiano, J.C. (2023) Fibrous TiO₂ Alternatives for Semiconductor-Based Catalysts for Photocatalytic Water Remediation Involving Organic Contaminants. *ACS OMEGA*. 8 (24). p.21585-21593.

Mashazi, P.N., Britton, J. and Nyokong, T.
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DEPARTMENT OF Computer Science



Professor Karen Bradshaw
Head of Department

Introduction

The research activity in the Department of Computer Science is organised around several mutually supporting research groups, the boundaries of which fluctuate as new technologies and techniques are developed or extended into current research domains. There is a strong focus on applied Machine Learning and Artificial Intelligence in general.

The Department's research is largely conducted under the auspices of the Telkom Centre of Excellence (CoE) in Distributed Multimedia, which is an initiative that has been ongoing since 1997 and brings together industry and academia. In addition to, but separate from the CoE, a multi-disciplinary research initiative between the South African Institute for Aquatic Biodiversity (SAIAB), the Computer Science Department and the Mathematics Department at Rhodes University was set up in 2022.

The current research groups in the Department, together with the main researchers, are outlined below.

Artificial Intelligence and Robotics

(Mr James Connan, Dr Dane Brown, Professor Karen Bradshaw, Dr Stones Dalitso Chindipha and Mr Josh van Staden)

This group focuses on three distinct areas of Artificial Intelligence, namely, image processing, machine learning and intelligent agents. Research is conducted in a wide range of application areas using appropriate techniques that are evolving at a rapid pace.

Security and Networks

(Dr Stones Dalitso Chindipha, Professor Barry Irwin and Dr Alan Herbert)

The Security and Networks Research Group (SNRG) concentrates in the areas of Information Security and Computer Networks, both crucial in modern computing and telecommunications.



Computer Science Honours students placed third overall at the South African National Research Network (SANReN) Cyber Security Competition where they achieved a perfect score on a task, from *left to right*: Siyamthanda Hlomendlini, Gabriella Govender, Dr Stones Dalitso Chindipha and Kenneth Chieza.

Photo: Department of Computer Science.

The Department of Computer Science is organised around several mutually supporting research groups, the boundaries of which fluctuate as new technologies and techniques are developed or extended into current research domains. There is a strong focus on applied Machine Learning and Artificial Intelligence in general.

Convergence

(Dr Zelalem Shibeshi, Professor Nomusa Dlodlo and Professor Alfredo Terzoli)

This group focuses on the rich intersection of legacy telecommunication systems and organisations and the Internet. The main research theme is 'Software Defined Networks, Network Function Virtualisation, Cloud and Fog computing for 5G networks'.

Distributed and Parallel Computing

(Professor George Wells and Professor Karen Bradshaw)

As one of the most established areas of research in the Department, this group focuses on the ever-present and vital theme of parallel and distributed computation, in particular the use of GPUs for high performance computing and concurrent programming in the Java programming language.

Software Design and Development

(Dr Yusuf Motara)

This group focuses on finding ways in which the next generation of software and software development can be conceptualised, designed, taught, and implemented. The research agenda encompasses Computer Science education and gamification in this context.

ICT for Development

(Professor Nomusa Dlodlo, Dr Zelalem Shibeshi and Professor Alfredo Terzoli)

This group focuses on a long-term, multidisciplinary effort to introduce meaningful and sustainable ICT in impoverished rural and peri-urban areas of South Africa. The group is currently

also working in the areas of the Internet of Things and Blockchain applications.

Bioinformatics

(Professor Philip Machanick)

Rhodes University Bioinformatics (RUBi) Research Group is an interdisciplinary group based in the Department of Biochemistry and Microbiology and which focuses on collaborative research to produce computational outcomes of biological significance.

Immersive Audio

(Professor Richard Foss)

This group focuses mainly on the conceptualisation and implementation of a distributed immersive audio solution for a range of professional audio devices, such as loudspeakers and mixing consoles for application in live sound installations and Virtual Reality.

Postgraduates / Graduations

The recipient of the Centre of Excellence Prize for the Best Research Student in Computer Science in 2023 was **Marc Marais**. He was awarded an MSc with Distinction for his research on the automated recognition of sign language.



Malithi De Silva presenting in London, UK.
Photo: Department of Computer Science.

A PhD candidate in the Department, **Malithi de Silva**, was awarded the popular vote prize at the 3-Minute Thesis Competition held at Rhodes. This competition challenges students to present their research to an intelligent non-specialist audience in three minutes.

A team of four Honours students from the Department was placed third overall out of the ten (10) university teams selected to participate in the finals of the annual South African National Research Network (SANReN) Cyber Security Challenge in December 2023. The team achieved a perfect score on one of the tasks, winning this challenge outright.

Distinguished Visitors / International Visits

During her academic leave, **Professor Nomusa Dlodlo** was based at the National University of Science and Technology (NUST) in Bulawayo, Zimbabwe, where a major research funding proposal was finalised and submitted. This proposal has subsequently been awarded funding.

During May 2023, **Professor Karen Bradshaw** visited the National Research Institute for Agriculture, Food and the Environment (INRAE) in Montpellier, France for discussions and further work on the collaborative project with the Institute for Water Research (IWR). This was followed by a research visit to her long-standing agent-based modelling research and training collaborators at the Hamburg Applied University of Technology.

Significant Research Aligned Events

In November 2023, **Associate Professor Dane Brown** was invited to present a keynote address at the International Conference on Artificial Intelligence and its Applications (icARTI 2023) in Mauritius. Associate Professor Brown spoke on the use of deep learning techniques for labelling and classification tasks using images of fish taken from underwater videos.

DEPARTMENT OF

Computer Science

Peer Reviewed Non-Subsidy-Earning Journal Research Publications

Brown, D.L. and Poole, L.C.
Brown, D.L. and Poole, L.C. (2023) Enhanced Plant Species and Early Water Stress Detection Using Visible and Near-Infrared Spectra. *Advances in Intelligent Systems and Computing*. 1439 (1). p.765-779.

Peer Reviewed Subsidy-Earning Journal Research Publications

Boby, A.Z., Brown, D.L. and Connan, J.
Boby, A.Z., Brown, D.L. and Connan, J. (2023) A Practical Use for AI-Generated Images. *Communications in Computer and Information Science*. 1841 (2023). p.1-11.

Boby, A.Z., Brown, D.L. and Connan, J. (2023) Iterative Refinement Versus Generative Adversarial Networks for Super-Resolution Towards Licence Plate Detection. *Lecture Notes in Networks and Systems*. 672 (2023). p.249-362.

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Marais, M., Brown, D.L., Connan, J. and Boby, A.Z. (2023) Improving Signer-Independence Using Pose Estimation and Transfer Learning for Sign Language Recognition. *Communications in Computer and Information Science*. 1782 (2023). p.415-428.

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Okuthe, J.A. and Terzoli, A. (2023) Assessing the Impact of DNS Configuration on Low Bandwidth Networks. *Lecture Notes of the Institute for Computer Sciences, Social-Informatics and Telecommunications Engineering*. 499 (2023). p.76-86.

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Kwedza, P.T. and Chindipha, S.D. Cryptojacking Detection in Cloud Infrastructure Using Network Traffic. *3rd International Conference on Electrical, Computer and Energy Technologies (ICECET 2023)*. Radisson RED Hotel V&A Waterfront, Cape Town. South Africa. November 2023.

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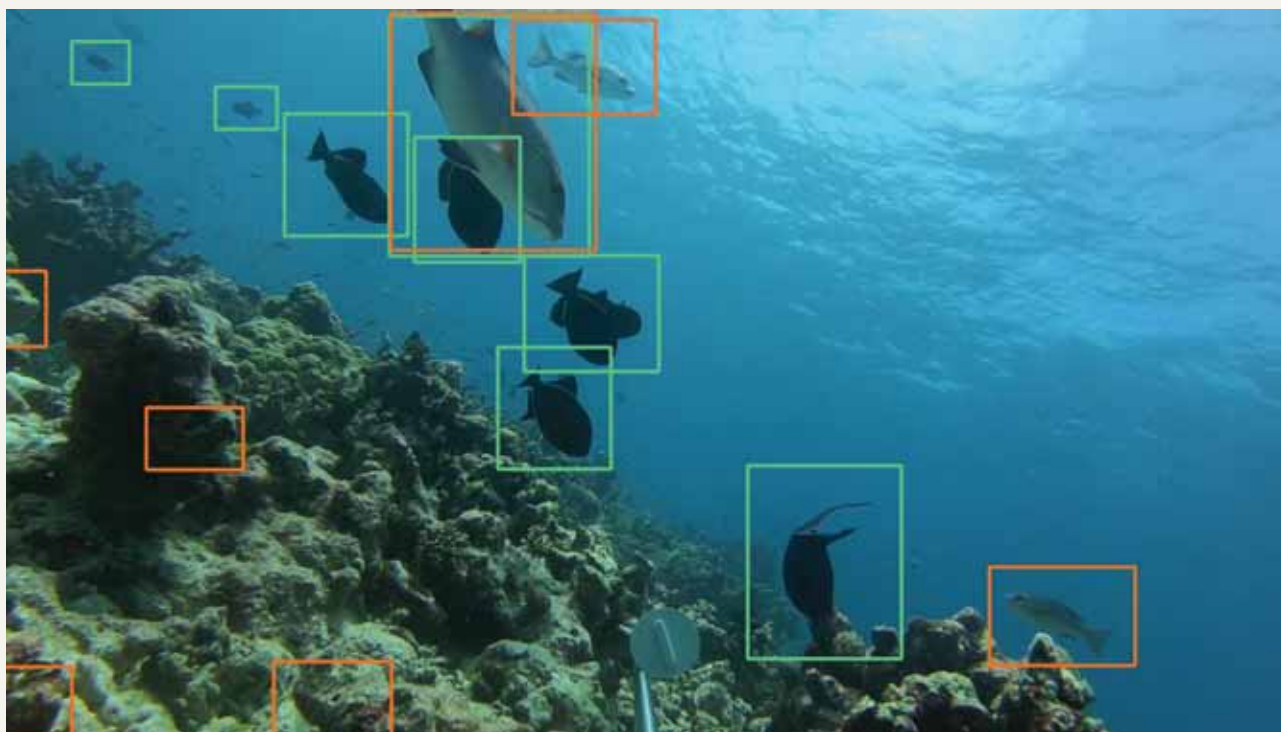
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Machanick, P. The Case for a Cray on a Chip. *SAICSIT 2023*. 26 Degrees South Bush Boho Hotel. Muldersdrift. South Africa. July 2023.

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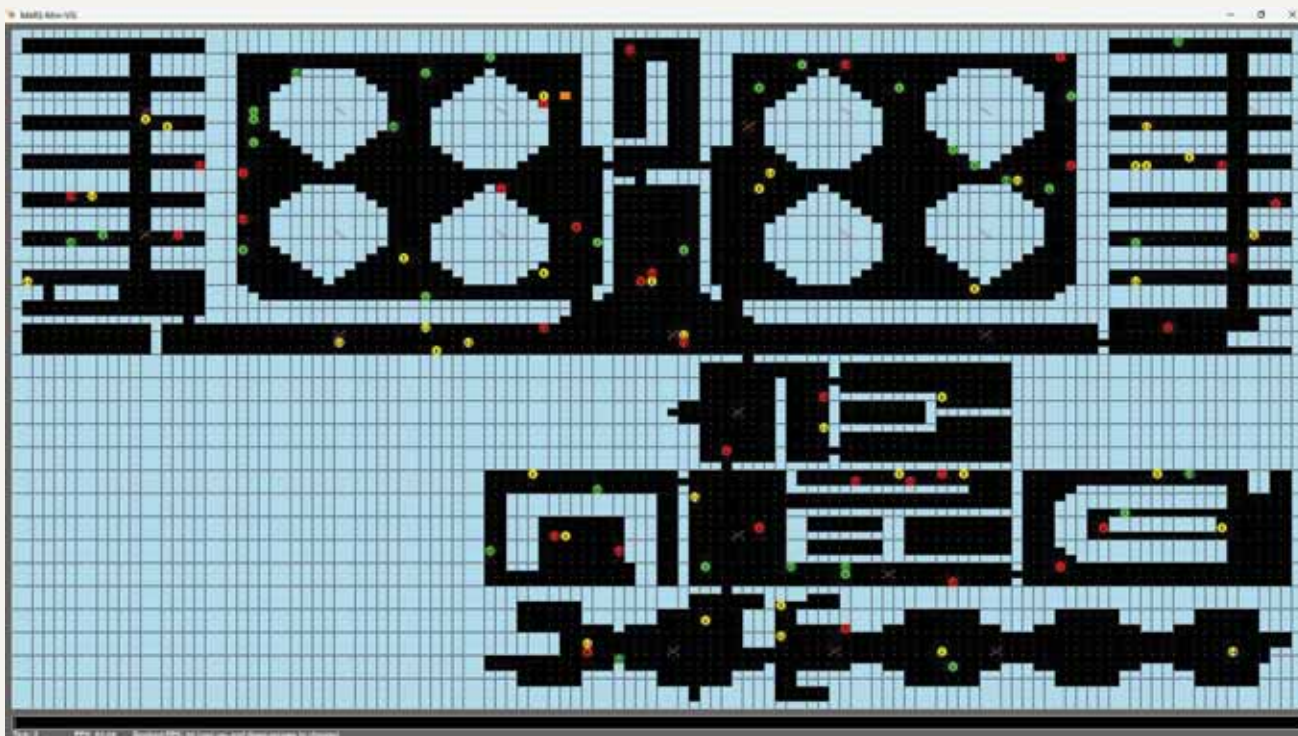
Marais, K. and Foss, R.

Marais, K. and Foss, R. A Comparative Analysis of Speaker and Headphone-Based Immersive Audio in VR and Gaming Applications. *2023 Immersive and 3D Audio: from Architecture to Automotive (I3DA)*. Bologna. Italy. September 2023.



Detecting fish in underwater images.

Photo: Department of Computer Science.



Simulation of evacuation of computer labs due to fire.
Photo: Department of Computer Science.

Marais, M., Brown, D.L., Connan, J. and Bobby, A.Z.

Marais, M., Brown, D.L., Connan, J. and Bobby, A.Z. Spatiotemporal Convolutions and Video Vision Transformers for Signer-Independent Sign Language Recognition. *6th International Conference on Advances in Big Data, Computing and Data Communication Systems (icABCD)*. Virtual, Durban. South Africa. August 2023.

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Maribana, C.T. and Chindipha, S.D. Malware Detection and Classification. *25th Southern Africa Telecommunication Networks and Applications Conference (SATNAC) 2023*. Champagne Sports Resort, Central Drakensberg, KwaZulu-Natal. South Africa. August 2023.

Masamvu, N. and Bradshaw, K.

Masamvu, N. and Bradshaw, K. A Cognitive Approach to Simulating Human Behaviour for Assessing Security Risk. *16th International Business Conference*. Swakopmund Hotel and Entertainment Centre, Swakopmund. Namibia. September 2023.

Sonne, K. and Chindipha, S.D.

Sonne, K. and Chindipha, S.D. An Automated System for Detecting and Preventing Phishing Attempts on Steam Accounts. *The 3rd International Conference on Electrical, Computer and Energy Technologies (ICECET 2023)*. Radisson RED Hotel V&A Waterfront, Cape Town. South Africa. November 2023.

Research Papers Presented at Academic/Scientific Conferences (Non-peer-reviewed Proceedings)

Bradshaw, K.

Cuthbert, C., Pearce, N.J. and Bradshaw, K. Data Visualization of Budgeting Assumptions: An Illustrative Case of Transdisciplinary Applied Knowledge. *IMSCI 2023*. Orlando, Florida. United States. March 2023.

Cuthbert, C., Pearce, N.J. and Bradshaw, K. A Transdisciplinary Methodology for Knowledge Integration. *WMSCI 2023*. Orlando, Florida. United States. September 2023.

DEPARTMENT OF Drama



Ms Selloane Mokuku
Acting Head of Department

Introduction

This report lays out the achievements of the Department of Drama in the areas of Postgraduate candidates, significant research achievements as well as publications. There were ten (10) Honours students and they all passed. The Department staged a number of productions at festivals such as the National Arts Festival and the Cradle of Creativity. It is worth noting that the Department hosted the inaugural Pride Week performances where MEQOQO Playback Theatre Collective performed.

Postgraduates / Graduations

Honours 2023

Caitlin Barton - Passed with distinction

Lebohang Ntsane - Passed with distinction

Masego Madisha - this student undertook a project that addressed issues of injustice in the seaweed industry.

Nhlanhla Mavimbela - Passed with distinction - this student undertook a project that addressed access to hormonal replacement therapy using Legislative Theatre.

Masters 2023

MA 1

Joshua Arnold

MA 2

Khanya Ngcuka - presented their production *Second Hands* at the National Arts Festival and it won the Standard Bank Awards Ovation Bronze. The production was further presented at Theatre Arts in Cape Town.

Cailyb Prinsloo - Passed with distinction

Martinique Kotze - Passed with distinction

Drama

Concerts, Exhibitions, Performances, Workshops, Events

Krastin, G.J.

Krastin, G.J. Artist. 12 Labours. *7th Performance - International Performance Art Exhibition*. Ação Educativa, São Paulo. Brazil. 10 - 12 November 2023.

Krastin, G.J. Curator. Arcade2023. *Arcade2023*. The 1820 Settler's National Monument, Makhanda. South Africa. 20 - 25 March 2023.

Krueger, A.

Krueger, A. Performer. Everybody is a Bridge. *Piano & Poems*. Beethoven Room, Makhanda. South Africa. 13 July 2023.

Mostert, C.

Daula, D.H.H., Van Der Walt, A. and Mostert, C. Collaborative pianist. un(BECOMING), a semi-staged recital. Alida van der Walt (mezzo soprano), Dominic Daula (piano), and Carla Mostert (direction). Programme: Barbara Strozzi - 'Spesso per entro al petto'; Louise Reichardt: 'Vanne felice rio'; Robert Schumann: 'Frauenliebe- und Leben', opus 42; Margaret Bonds: 'Women Have Loved Before As I Love Now' and 'What Lips My Lips Have Kissed' from 'Six Songs on



PEN(T)S DOWN HAHÁ! production is inspired by events of 2022 where children and young people died whilst celebrating the end of exams in June 2022 in an event called *Pens Down*. The play won bronze at the 2023 Standard Bank Ovation Awards and toured to the Cradle of Creativity International festival in Johannesburg. The students got to perform at the iconic Market Theatre. The script was written by Lulu Mokuku, and directed by Luvuyo Yanta. (middle): Suthukazi Memela, (left): Rozelle Hartenzberg, (back): Memela Lisa Simelane (right): Nokulunga Masia. (All drama students).

Photo: Simphiwe Magolego, JMS student.

Poems by Edna St Vincent Millay'; Madeleine Dring: 'Song of a Nightclub Proprietress' and 'Business Girls' from 'Five Betjeman Songs'; Kurt Weill: Youkali; Arnold van Wyk: Vaalvalk. Total duration: 50 minutes. un(BECOMING). Beethoven Room, Beethoven House, Department of Music and Musicology, Rhodes University, Makhanda. South Africa. 29 September 2023.

Mokuku, S.

Mokuku, S. International Playback Theatre Network (IPTN) conference - Muldersdrift, Johannesburg, 4 - 8 December 2023. Attended the conference with Applied Theatre Students and MEQOQO Playback Theatre Collective members: Khanya Ngcuka, Kamvelihle Buwa, Lethabo Makweya, Masego Madisha, Nokulunga Masia.

Mokuku, S. Artistic Director, MEQOQO Playback Theatre Performances, The Main Theatre. *R U IN?* 26 September 2023 - inaugural Pride Week 2023.

Mokuku, S. Artistic Director, MEQOQO Playback Theatre Performances, The Box Theatre. *R U BEING RACED?* 27 September, 2023.

Mokuku, S. Director, Facilitator, Dramaturg, M(art)hematics Festival; with Sisonke National Art Education. STEAM Waya Waya, B.B. Zondani Hall, 13 October 2023.

Mokuku, S. Writer, Researcher, Pen(t)s Down Haha! *National Arts Festival 22 - 25 June 2023*. (cast: Lisa Simelane, Sthukazi Memela, Nokulunga Masia, Rozelle Hartenzberg and directed by Luvuyo Yanta) - Production won the 2023 Standard Bank National Ovation; Bronze.

Mokuku, S. Writer, Researcher; Pen(t)s Down Haha! *Rhodes Main Theatre*. 15 August 2023.

Mokuku, S. Writer, Researcher; Pen(t)s Down Haha! *Cradle of Creativity Festival*. Johannesburg, 20 - 27 August 2023.

Parker, A.C.

Parker, A.C. Director; Performer. Excess Baggage [performance]. *Excess Baggage*. Rhodes Box Theatre, Makhanda. South Africa. 13 February 2023.

Parker, A.C. and Krastin, G.J.

Parker, A.C. and Krastin, G.J. Director; Performer. To the moon with a piece of paper [3-channel film triptych]. *Performance Studies International #28*. Ramalao Makhene Theatre, Johannesburg. South Africa. 3 August 2023.

Creative Writing

Krueger, A.

Krueger, A. (2023) life in a day. In: Allan, K. (ed.). *life in a day*. Makhanda: New Coin.

Krueger, A. (2023) Everybody is a Bridge: Poems, Prose-poems, Notes & Fragments. In: *Everybody is a Bridge: Poems, Prose-poems, Notes & Fragments*. Johannesburg: Botsotsotso.

Peer Reviewed Non-Subsidy-Earning Journal Research Publications

Krastin, G.J.

Krastin, G.J. (2023) C(ur)atyzing a Pluriverse in iRhini Grahamstown Makhanda. *TURBA: The Journal for Global Practices in Live Arts Curation*. 2 (2). p.103-106.

Peer Reviewed Subsidy-Earning Journal Research Publications

Mokuku, S. and Magagula, N.M.

Mokuku, S., Molefe, B. and Magagula, N.M. (2023) Lifting the "knee on the neck" through virtual collaboration within creative and therapeutic art methodologies. *Drama Therapy Review*. 9 (1). p.23-44.

Research Papers Presented at Academic/Scientific Conferences (Non-peer-reviewed Proceedings)

Krueger, A.

Krueger, A. Avatars & Authenticity: Implications for an 'Embodied Internet'. *International Federation of Theatre Research - "Myths Mythmaking & Performance"*. University of Ghana, Accra. Ghana. July 2023.

Parker, A.C. and Krastin, G.J.

Parker, A.C. and Krastin, G.J. Cross-border meanderings and the micropactices of paper. *Performance Studies International #28*. Market Laboratory, Johannesburg. South Africa. August 2023.

DEPARTMENT OF Economics and Economic History



Professor Jen Snowball
Head of Department

Introduction

The 2023 academic year was filled with much research activity in Economics in all the Departmental focus areas including Money, Banking and Finance; Cultural and Environmental Economics; and Development, Institutions and Labour Markets.

Postgraduates / Graduations

Takudzwa Makuwa, a Financial Markets Masters student, was one of the Rhodes University Top 100 recipients in the Community Engagement Category 2023. Mr Takudzwa Makuwa received the award from DVC: Academic, Professor Mabokang Monnapula-Mapesel.

Ms Fiona Drummond presented her PhD work at the Association for Cultural Economics International (ACEI) Conference in Bloomington, Indiana in June 2023, and participated online in a workshop organised around the ARUA conference in Lagos in November.

Distinguished Visitors / International Visits

Dr Steffen Otterbach, of the University of Hohenheim, was the Hobart Houghton Visiting Fellow for 2023, jointly hosted by the ISER and the Economics Department. Dr Otterbach is a lecturer and researcher at the Institute for Health Care and Public Management as well as the Director of the Gambling Research Center, University of Hohenheim. With a specialisation in empirical economics, his research focuses on the impact of working conditions on health and wellbeing.

Professor Jen Snowball spent two months at King's College London as a Global Visiting Fellow, hosted by the African Leadership Centre, and the Department of Culture, Media, and Creative Industries. A proposal developed during the visit was accepted as a new ARUA/The Guild Cluster of Research Excellence, with the title: "Creative Economies: Cultures, Innovation and Sustainability" which aspires to become an international point of reference for research on creative economies.

Lead partners are Rhodes University, King's College London, and the University of Lagos.

Significant Research Aligned Events

Professor Mike Rogan contributed to a United Nations University World Institute for Development Economics Research MOOC (Massive Open Online Course) on Decent work and Economic Growth: Achieving SDG 8. The project is a partnership between UNU-WIDER and the Sustainable Development Goals (SDG) Academy and is freely available internationally on the edX online education platform. Professor Rogan was invited to be an expert contributor at the G20 Labour Summit in Patna, India and the UN-Women Expert Group Meeting to prepare for the 68th session of the Commission on the Status of Women.

Professor Meshach Aziakpono re-joined the Department at the start of 2023, and has led several ongoing initiatives at the Postgraduate level, including the introduction of research support workshops for Masters students and PhD candidates, and initiating the process of applying for accreditation of a new Masters degree in Applied Economics with a coursework component. Professor Aziakpono was also invited to give an expert presentation on the design principles of Partial Credit Guarantee Schemes to the *Partial Credit Guarantee Forum* in Maseru, Lesotho.

At the national level, Professor Jen Snowball was appointed as the President Elect of the Economic Society of South Africa, and Professor Khumalo was elected as an ESSA Council Member.

Ms Niki Cattaneo was again involved in APORDE (The African Programme on Rethinking Development Economics), which she coordinates, as well as lecturing on the programme. APORDE is a high-level training programme in development economics taught by leading international and African economists. She is also a member of the UNCTAD Working Group on Data for Services Trade and Development Policies.

There was also participation in workshops and training to enhance research capacity. **Ms. Nwabisa Malimba** presented a paper based on her PhD work in international trade at a summer school organized by the *Journal for International Economics* (JIE) in Greece. **Dr Sandie Phakathi** and **Dr Tamaryn Friderichs**, Ms Nwabisa Malimba and **Ms Nqobile Nzimande** (an Economics PhD candidate) attended a data management course offered by SALDRU at the University of Cape Town.

Links between community engagement and research and teaching and learning have also been emphasised. **Professor Tsitsi Effie Mutambara** attended the International Conference on Community Engagement and Service Learning in Durban to present a paper entitled, "Service learning in teacher education programmes". **Mr David Fryer** taught at the July 2023 Vuyisile Mini Winter School run by NALSU and supported by the Friedrich Ebert Stiftung. **Professor Sibanisizwe Khumalo** participated in the TAU Fellowship workshop in Durban to present a paper entitled: "Transitioning through Higher Education: Building an Identity".

The Annual Honours Student conference was held on the 29th and 30th of September 2023 at Rhodes University. The conference was organised by an elected student committee, assisted by staff. Students and staff from the Economics Departments of Nelson Mandela University and the University of Fort Hare also participated. The conference had two guest speakers: Professor Steffen Otterbach, the international Hobart Houghton Visiting Fellow for 2023, and Ms Siviwe Mhlana, a Researcher at the Southern Centre for Inequality Studies (SCIS) at the University of the Witwatersrand.

DEPARTMENT OF

Economics and Economic History

Books/Chapters/Monographs

Fine, B.

Ngoma, A.L., **Fine, B.**, Ashman, S., Vilakazi, T., Bosiu, T., Bell, J., Das Nair, R., Baker, L., Burton, J., Hirsch, A., Di Paola, M., Castel-Branco, R., Sefalafala, T., Swilling, M., Callaghan, N., McCallum, W., Adelzadeh, A., Cawe, A., Baloyi, B., Gqoli, M., Gobhozi, N., Malabela, M.H., Mohamed, S., Mukandila, A., Ngcaweni, B., Netshitenzhe, J., Omar, Y.A. and Rakabe, E. (ed.) (2023) *The Evolving Structure of South Africa's Economy: Faultlines and Futures*. Johannesburg: MISTRA. ISBN: 9781920690397.

Concerts, Exhibitions, Performances, Workshops, Events

Rogan, M., Fryer, D. and Mhlana, S.

Van Der Walt, L., Rogan, M., McGregor, W., Hattingh, S., Jara, M., Fryer, D., Mhlana, S. and Ntutela, M.M. Design, facilitation, presentation. "The Labour Movement and the State of the State". *Vuyisile Mini Workers School, Neil Aggett Labour Studies Unit (NALSU)*. Graham Hotel, Makhanda. South Africa. 13 - 17 November 2023.

Rogan, M.

Rogan, M. 'Structural transformation and informal self-employment in Sub-Saharan African cities'. *United Nations University World Institute for Development Economics Research (UNU-WIDER) / African Cities Research Consortium (ACRC) Symposium on Urbanization without Structural Transformation*. Helsinki, Finland 9 - 10 November, 2023.

Rogan, M. 'Taxing the Informal Economy: Policy, Evidence and Lessons for the Future'. *Webinar co-hosted by the International Centre for Tax and Development (ICTD), the Organisation for Economic Co-operation and Development (OECD) and Women in Informal Employment: Globalizing and Organizing (WIEGO)*. 4 April, 2023.

<https://www.ictd.ac/event/webinar-taxing-the-informal-economy/>

Friderichs, T and Rogan, M.

Friderichs, T. and Rogan, M. (2023). "A Study on the Destination of TVET College Graduates to Strengthen Employment Promotion in South Africa". *Presented at the DHET Research colloquium on Making Technical and Vocational Education and Training Colleges Institutions of Choice*. OR Tambo Premier Hotel, Johannesburg. 15 November 2023.

Other Publications

Mhlana, S. and Rogan, M.

Mhlana, S., Rogan, M., Moussié, R. and Roevers, S. (2023) Informal employment: what is missing from national economic recovery plans? In: *UNU-WIDER Working Paper*. Helsinki: UNU-WIDER.

Rogan, M.
Rogan, M. 'Ghana's e-levy is unfair to the poor and misses its revenue target: a lesson in mobile money tax design' *The Conversation*. 27 March 2023. <https://theconversation.com/ghanas-e-levy-is-unfair-to-the-poor-and-misses-its-revenue-target-a-lesson-in-mobile-money-tax-design-201303>

Phakathi, S.
Phakathi, S., Sinyolo, S. and Ndinda, C. (2023). Gender and water access in South Africa: status, trends, and policy implications. *Published Policy Brief, October*. <http://hdl.handle.net/20.500.11910/22658>

Peer Reviewed Non-Subsidy-Earning Journal Research Publications

Egbetokun, O.A. and Fraser, G.
Egbetokun, O.A. and Fraser, G. (2023) Water Footprint and Economic Productivity of Potato Production in South Africa. *World Journal of Environmental Biosciences*. 12 (4). p.27-34.

Mutambara, T.E. (2023). Service learning in teacher education programmes: A literature review on the rationale, benefits, and challenges. *International Journal of Higher Education Management (IJHEM)*. Volume 9 Number 2 (August 2023). p.63 - 65.

Mutambara, T.E. (2023). Examining current Asean-Plus-One FTA trade and the implications for intra-regional trade with the Regional Comprehensive Economic Partnership (RCEP) in place. *Iosr Journal of Economics and Finance (ISOR-Jef)*. Volume, Issue 1 Ser 1 (September - October 2023), Pp 19-36. DOI: 10.9790/5933-1405011936

Peer Reviewed Subsidy-Earning Journal Research Publications

Aziakpono, J.M.
Sanga, B. and Aziakpono, J.M. (2023) FinTech and SMEs financing: A systematic literature review and bibliometric analysis. *Digital Business*. 3 (2). p.1-12.

Zinyoro, T. and Aziakpono, J.M. (2023) Performance determinants of life insurers: A systematic review of the literature. *Cogent Economics & Finance*. 11 (2). p.1-11.

Egbetokun, O.A. and Fraser, G.
Egbetokun, O.A. and Fraser, G. (2023) Farming households' food demand in South West Nigeria: An application of Substitution Elasticity Demand System (SEDS). *African Review of Economics and Finance*. 15 (1). p.1-11.

Fraser, G.
Yose, P., Thondhlana, G. and Fraser, G. (2023) Conceptualizing the socio-cultural impacts of marine plastic pollution on human well-being-A perspective. *Marine Pollution Bulletin*. 194 (A). p.1-7.

Friderichs, T.J., Keeton, G.R. and Rogan, M.
Friderichs, T.J., Keeton, G.R. and Rogan, M. (2023) Decomposing the impact of human capital on household income inequality in South Africa: Is education a useful measure? *Development Southern Africa*. 40 (5). p.997-1013.

Khumalo, S.A.
Gonese, D., Tsegaye, A., Khumalo, S.A. and Kapingura, F.M. (2023) Trade openness and non-income poverty in Southern African Development Community (SADC) countries: A panel Autoregressive Distributive Lag (ARDL) analysis. *Cogent Economics & Finance*. 11 (2). p.1-11.

Marire, J.
Marire, J. (2023) Structure of R&D capital expenditure and national total factor productivity. *Cogent Economics & Finance*. 11 (1). p.1-11.

Marire, J. (2023) Do fiscal deficits influence private savings in South Africa? An empirical note. *Journal of Economic and Financial Sciences*. 16 (1). p.1-13.

Rogan, M.
Anyidoho, N.A., Gallien, M., Rogan, M. and van den Boogaard, V. (2023) Mobile money taxation and informal workers: Evidence from Ghana's E-levy. *Development Policy Review*. 41 (5). p.1-26.

Snowball, J.D.
Snowball, J.D., Collins, A. and Bickerton, C. (2023) Legal and illegal export of cultural heritage artefacts from developing countries: Protection of cultural heritage in South Africa. *Cogent Social Sciences*. 9 (2206345). p.1-18.

Snowball, J.D. and Tarentaal, D.
Snowball, J.D. and Tarentaal, D. (2023) Determinants of the Diversity of Cultural Participation and Consumption in South Africa. *International Journal of Arts Management*. 25 (3). p.5-18.

Snowball, J.D., Drummond, F.J. and Tarentaal, D.
Snowball, J.D., Drummond, F.J. and Tarentaal, D. (2023) Supporting the festival industry in troubled times: Higher education research and collaboration with festivals in South Africa during COVID-19. *Industry and Higher Education*. 38 (1). p.78-86.

Snowball, J.D., Tarentaal, D. and Drummond, F.J.
Snowball, J.D., Tarentaal, D., Drummond, F.J., Comunian, R. and Gross, J. (2023) Online festival experiences, eventscares and cultural value: insights on the dilemmas faced by two South African festivals during COVID-19. *Annals of Leisure Research*. 2023 (2023). p.1-25.

Snowball, J., and Gouws, A. (2023). The impact of COVID-19 on the cultural and creative industries: determinants of vulnerability and estimated recovery times. *Cultural Trends*, 1-24. <https://doi.org/10.1080/09548963.2022.2073198>

Research Papers Presented at Academic/Scientific Conferences (Non-peer-reviewed Proceedings)

Aziakpono, M.J.
Aziakpono, M.J. (2023) "Expert Presentation on the design principles of Partial Credit Guarantee Schemes". *Partial Credit Guarantee Forum - Exploring the Effectiveness of PCG Scheme in Lesotho*. Avani Maseru Hotel, Maseru, Lesotho. 7 February 2023.

Aziakpono, M.J. (2023) "Building Back Better: The Role of Development Finance in Unlocking the SDGs in the Post-Covid-19 Era". *Keynote paper presented at the LCU Faculty of Management and Social Sciences (FM&SS) International Conference on: "Achieving SDGS in 2030: Approaching Possibilities through Socio-Political, Economic and Management Dimensions"*. Ibadan, Nigeria. 4 - 6 April 2023.

Zinyoro, T. and Aziakpono, M.J. (2023): Efficiency, productivity and technology gaps in selected African life insurance markets: A meta frontier dynamic network data envelopment analysis approach. *Paper presented at the Hybrid African Finance Association Conference*. 16 - 17 May 2023.

Khumalo, S.
Khumalo, S. (2023) Presented a paper entitled "Liquidity Shocks and Stock Market and Stock Market Efficiency in South Africa". *International Conference on Economics, Finance and Business*. Prague School of Economics and Business, Winston Churchill Square, Prague, Czech Republic. 11 - 13 September 2023.

Khumalo, S.A., and Nel, H.
Matapuri, D., Khumalo, S.A., and Nel, H. Liquidity Shocks And Stock Market Efficiency In South Africa. *International Conference on Economics, Finance and Business*. Prague School of Economics and Business, Winston Churchill Square, Prague, Czech Republic. 11 - 13 September 2023.

Marire, J.
Marire, J. (2023) Presented a paper. *35th conference of the European Association of Evolutionary Political Economy*. Leeds University, UK. 13 - 15 September 2023.

Mccann, C.M.
Talbot, A.L.P. and Mccann, C.M. Conceptualisation and experiences of engaged citizenship as critical consciousness, transformative education and mutual joy: An autoethnography. *An autoethnography. 6th World Conference on Research in Teaching and Education (WORLDTE)*. Virtual. July 2023.

Mutambara, T.E.
Mutambara, T.E. (2023). Presented a paper entitled "Examining the regional intensity of trade in Africa and the implications for intra-Africa trade in the African Continental Free Trade Area (AfCFTA)". A Virtual Presentation. *TESS Talk Economics and Business Webinar 2023*. Germany, Berlin, 9 - 10 September 2023.

Mutambara, T.E.
Mutambara, T.E. (2023). Presented a paper entitled "Service learning in teacher education programmes: A literature review on the rationale, benefits, and challenges". Paper presented online. *12th International Conference on Restructuring the Global Economy (ROGE) 2023 Towards Sustainability: 7 - 8 August 2023*. In Association with the Faculty of Commerce and Business Administration - Future, University in Egypt. University of Oxford, UK.

Mutambara, T.E. (2023). Presented a paper entitled "Using Trade for Industrial Development: South Africa-Africa trade and South Africa's



Photo: Chris Marais.

trade with its major trading partners (t23-093)". Paper accepted for presentation and presented online. *SIBR Conference on Interdisciplinary Business and Economics Research*. 5 - 6 January, 2023. Tokyo, Japan. [Session B1: Venue: Hall C, 2/F].

Phakathi, S.

Bruwer, G. and **Phakathi, S.** (2023). The impact of urban gardening on household food security during Covid-19: Empirical evidence from Makhanda Township, Eastern Cape, South Africa. Presented paper. *60th Agricultural Economics Association of South Africa, combined with the 7th African Agricultural Economics*. Durban, 18 - 21 September 2023.

Rogan, M.

Rogan, M. 'Taxation and Social Protection in Accra's Informal Sector at the Intersection of Two Crises'. *Development Studies Association Conference*. University of Reading, UK, 28 - 30 June 2023.

Snowball, J.

Snowball, J. and Gouws, A. (2023) Cultural Consumption and equality of access during economic downturns: The cultural expenditure Gini Coefficient for South Africa. *Economic Society of South Africa (ESSA) conference*. Pretoria. 11 - 14 September 2023.

Snowball, J. (2023). Invited Panel Discussion: "Cultural Heritage in the Frontier: Global Values, International Cooperation and New Managerial Rules". *Association for Cultural Economics International*. Bloomington, USA. 27 - 30 June 2023.

Snowball, J. and Gouws, A. (2023). Cultural Consumption and equality of access during economic downturns: The cultural expenditure Gini Coefficient for South Africa. *Economic Society of South Africa*. Pretoria, 12 - 14 September 2023.

FACULTY OF EDUCATION:

Department of Secondary and Post-School Education (DoSPSE)



Dr Kavish Jawahar
Head of Department

Rhodes University hosted the 10th conference of the South African Education Research Association (SAERA) from 31 October - 3 November 2023 in East London. The conference was attended by two-hundred and ninety-seven (297) delegates who were welcomed by DVC: Research, Innovation and Strategic Partnerships, Dr Kwezi Mzilikazi. Some thirty-six (36) Education Faculty staff and students presented papers as well as an exhibition of sixteen (16) posters on the Faculty's research. Notable was that seventeen (17) B.Ed. Honours students participated in their first research conference, under the leadership of **Professor Callie Grant**. One (1) of the Faculty's PhD candidates, **Dr John Bhurekeni**, supervised by **Distinguished Professor Heila Lotz-Sisitka**, received SAERA's Best PhD Award for 2023, for his PhD by *Publications on Philosophy for Children*, undertaken in resettlement schools in Zimbabwe. The Faculty has been building on the momentum created by hosting the conference. **Dr Clement Simuja**, for example, formed a national Special Interest Group (SIG) on Technology in Education. Faculty members will also serve as the Guest Editors of the October 2024 Special Issue of the *Journal of Education*, SAERA's academic journal.

Introduction

The Department of Secondary and Post-School Education celebrates its rich array of research-related accomplishments and engagements during 2023. These include the hosting of and participation in research fora, a diverse range of research outputs, international guest lectures, a full professor joining the team, contributions from a retiring academic, and the initiation of research supervision by an emerging researcher. Academics and Postgraduate students in the Environmental Learning Research Center (ELRC) continued to make impactful contributions both locally and globally.

Postgraduates / Graduations

During 2023, the Department of Secondary and Post-School Education celebrated the graduation of eleven (11) MEd students (of which eight (8) passed with Distinction), and eight (8) PhD candidates.

Distinguished Visitors / International Visits

Visitors to the ELRC included Professors Karen Sporre, Christina Osbeck, and Dr Annika Lilja who joined us for a pre-conference workshop for the South African Swedish Universities Forum event. They also collaborated with Distinguished Professor Lotz-Sisitka to host a workshop in the SASUF event hosted at the University of the Western Cape in March 2023. This was later followed by a visit from Umeå University staff and scholars who attended a PhD week programme prior to the SAERA Conference. Other visitors to the Environmental Learning Research Centre (ELRC) include Distinguished Professor Maureen Reid, a UNESCO CO-Chair in Biocultural Diversity, Sustainability, Reconciliation and Renewal at the University of Saskatchewan, Canada and Principle Investigator for the TRANSECTS project (Transdisciplinary Education Collaborations for Transforming Sustainability) with Dr Wendy James, the Director of the Gwenna Moss Centre for Teaching and Learning, also at the University of Saskatchewan. These visitors contributed to the TRANSECTS Indaba co-hosted by the ELRC and the Department of Environmental Science (Dr Jessica Cockburn). Dr Hanna Hoverberg from Malmo University also visited our Faculty, and set up good links with Associate Professor Ingrid Schudel on STEAM related research initiatives.



Dr John Bhurekeni received the 2023 SAERA Best PhD Award.
Photo: Department of Secondary and Post-School Education.



Education PhD candidates and lecturers from RU and Umeå University in Sweden meet in Makhandia during PhD week!
Photo: Department of Secondary and Post-School Education.

Funded by the Carnegie African Diaspora Fellowship Program, Dr Clement Simuja hosted Professor Kedmon Hungwe from Michigan Technological University at Rhodes University from May to July 2023, collaboratively developing a digital literacy curriculum for pre-service teachers. **Dr Kavish Jawahar** completed a research project on “Lekgotla as a Decolonial Approach to Early Career Academics: Being and Becoming”, in the Teaching Advancement at Universities (TAU) program. Through an Erasmus+ mobility programme, he presented the findings during his first guest lecture titled “Academic Development in a changing world: insights from South Africa”, at the University of Antwerp, Belgium. Senior Research Associate from the University of Antwerp, Professor Tom Smits, presented a guest lecture at Rhodes University on “Effective language programmes for Students who need extra language support: Results from a systematic meta-review” as part of an NRF Knowledge, Interchange and Collaboration (KIC).

Significant Research Aligned Events

Dean of the Faculty of Education and Chair of Environment and Sustainability Education, **Professor Eureta Rosenberg**, exemplified the seamless integration of research into the multifaceted responsibilities of academic life. In addition to facilitating workshops and authoring research articles and reports, Professor Rosenberg chaired the local organising committee of the 10th annual South African Education Research Association (SAERA) Conference hosted by Rhodes University in 2023. The conference, themed “Education(al) Foundations, Education(al) Futures”, facilitated critical engagement by leading and emerging researchers on how education(al) foundations (that are already in place, or being envisaged) shape education(al) futures, or not.

Dr Clement Simuja, played a significant role in advancing the department's research initiatives. He facilitated the Research Colloquium of the Eastern Cape Chapter of the Southern African Association for Research on Mathematics, Science, and Technology Education (SAARSTE). Dr Simuja and his Post-

graduate team also published several articles in the area of Technology in Education. Additionally, he presented research at the Teacher Education and Interdisciplinary Research (TEIR) Conference in Namibia and at the 31st SAARMSTE conference at the University of Free State. Notably, Dr Simuja had his first PhD candidate complete their studies - **Dr Theodorio Adedayo** has since then taken up a Postdoctoral Fellowship position at Cape Peninsula University of Technology.

The Department welcomed Professor of Mathematics Education, **Zingiswa Jojo**, to the academic team. Professor Jojo subsequently presented "A phenomenological study of teachers' professional learning and their understanding of making meaning in Mathematics" at the 10th International Conference on Science and Mathematics Education in Malaysia. Our retiring Senior Lecturer in Academic Literacies, Dr Caroline van der Mescht, published two (2) insightful papers in the foundational area of literacy education. Embodying our dedication to nurturing future academic leaders, nGAP lecturer **Mr Sean Nkosi**, took significant strides in his research journey by attending a course on Managing Research Supervision, completing the Strengthening Post-graduate Supervision course, and beginning MEd supervision while continuing his PhD research.

ELRC Research Report

The Environmental Learning Research Centre (ELRC) is a research centre dedicated to producing state of the art knowledge on environment and sustainability education, training and social learning. It houses two (2) research Chairs - one (1) in Environment and Sustainability Education held by **Professor**

Eureta Rosenberg, and one a SARCHI Chair in Global Change and Social Learning Systems held by **Distinguished Professor Heila Lotz-Sisitka**. The two (2) chairs work with researchers in the Faculty and ELRC (**Dr Injairu Kulundu-Bolus**, **Dr Wilma van Staden**, **Associate Professor Ingrid Schudel**, **Associate Professor Lausanne Olivitt** and **Emeritus Professor Rob O'Donoghue**) and research programmes. One of our most extensive research programmes focussing on Ocean Governance and Environmental Justice is led by **Dr Dylan McGarry**, working with **Taryn Pereira-Kaplan**, **Buhle Francis** and **Anna James**. Our research focusses on areas of theory and methodology development, practical and catalytic learning process research, including transformative, transgressive and transdisciplinary forms of learning, and education and skills system development research.

In 2023 the ELRC continued to develop theoretical and methodological tools for advancement in the areas of critical realism (Price, 2023), transdisciplinary science, and decolonial regenerative futures (Kulundu-Bolus, 2023); hydro feminism (McGarry & Francis, 2023) and research in the cultural historical activity theory tradition (Lotz-Sisitka *et al.*, 2023), which advances expansive learning research in the global South. Transdisciplinary methodology development includes understanding of institutional support for transdisciplinary research (Ngwenya *et al.*, 2023), arts-based methodologies for resilient futures (McGarry, 2023); and ethics and transdisciplinary social science in ocean governance (Pereira-Kaplan, 2023). Evaluation methodology includes work on the value creation framework (VCF) as an approach to evaluating social learning (Lotz-Sisitka *et al.*, 2023), co-producing narratives and indicators for adaptive governance (Roux *et al.*, working with Rosenberg, 2023); and how M&E can advance education, advocacy and action (Rosenberg, 2023, Pereira-Kaplan, 2023).

Methodology for green skills for Just Transitions research focussed on developing social ecosystem for skills approaches to skills development for the just transition with a highlight being a book published on this topic to advance understandings of Vocational Education and Training (VET 4.0 Africa Collective, 2023; Lotz-Sisitka *et al.*, 2023; Muhangi, 2023). Research on development of transformative learning methodology and approaches continued, with emphasis on engaged social learning and how e-learning can mediate transformative learning and change practices (van Staden *et al.*, 2023).

A new British Academy funded programme focussing on temporality and the Just Transition was set up, to better theorise the Just Transition with a highlight being the hosting of an international TIME LAB in Cape Town by the ELRC. This event brought 20 (twenty) inter-disciplinary researchers from around the world together to consider complex 'layering of time' and its implications for Just Transitioning of South African society.

Studies focussing on of transformative learning in a diversity of contexts continued with more than fifteen (15) case studies of Transformative Social Learning (TSL) in progress. These include studies focussing on expansive learning and rangeland management, hemp value chain commercialisation, natural resource management, sustainable food production and citizen-based water quality management. An expansive learning study



Faculty of Education staff and students proudly displaying the faculty branding at the 2023 SAERA conference.

Photo: Department of Secondary and Post-School Education.



International TIME LAB gathering in Cape Town for the Time and Just Transitions project.
Photo: Department of Secondary and Post-School Education.

by PhD candidate **Mzukisi Kuse** was concluded in South Africa's Living Catchments, with focus on the uMzimvubu catchment in the Eastern Cape. This study helped to inform the social learning outcomes of the South African Living Catchments programme, which works to advance co-operative governance in Strategic Water Management Areas in South Africa. Other studies are focussing on expansive learning in school food gardens, community participation in water management, rural women's livelihoods, and resolving human-wildlife conflicts in transboundary conservation areas. A highlight of this programme was co-hosting a Doctoral seminar in Zambia with Professor Arjen Wals and PhD candidates from Wageningen University working on expansive learning and river commons research.

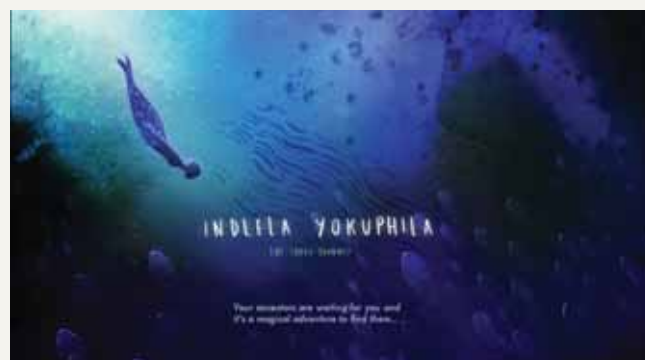
Another key focus of the ELRC's research is advancing transdisciplinary research methodology to inform research teaching. The TRANSECTS programme, led by Professor Eureka Rosenberg, offered a number of international opportunities to build capacity in transdisciplinary and engaged research. This

included the co-hosting of a Transdisciplinary Learning Lab in Germany. The ELRC's PhD candidate **Mzukise Kuse** attended the Lab, and **Preven Chetty** provided mentorship to graduate students from South Africa, Canada and Germany. Postdoctoral Fellow **Dudu Ngwenya** has been researching ways in which institutions are enabling transdisciplinary scholarly work (or not). Professor Rosenberg offered a five-day course on evaluation methodology to the national TRANSECTS network, and co-hosted a 3-day Indaba on transdisciplinary and engaged research with **Dr Jessica Cockburn** of the Department of Environmental Science, which benefitted from the visit to Rhodes of the Canadian TRANSECTS partners (see Visitors). The TRANSECTS is a programme within the DSI/NRF Community of Practice.

We also concluded a large research programme focussing on Transformative Education for Sustainable Futures. In this programme we co-ordinated the South African Hub involving fourteen (14) smaller scale transformative education cluster studies, with the '1stWeEat!' project led by Associate Professor Lausanne Olivitt, the citizen science geo-story project led by alumni **Dr Priya Vallabh**, the water activist monitoring project led by alumni **Dr Anna James**, and the project on re-imagining tools for legal engagement through photography led by PhD candidate **Luke Kaplan** and Research Associate Professor **Saskia Vermeylen**, being highlights of this international project. Led by Professor Leon Tikly from the University of Bristol, the project worked with sixty-eight (68) projects in South Africa, Somalia/Somaliland, Rwanda and India. The ZA Hub was led by Distinguished Professor Lotz-Sisitka, Dr Injairu Kulundu-Bolus, Garry Rosenberg and Dr Gamu Chakona.

Another area of ongoing research is our work to advance green skills learning pathways. Here we continued to focus on foundation building with the national Fundisa for Change programme being our flagship programme, with studies emerging around philosophy for children and environmental ethics, transformative learning in Life Orientation and strengthening the relationship between ESD and inclusivity in SADC teacher education programmes amongst others. Our work on building knowledge of green skills learning pathways

The One Ocean Hub continued to work with small scale fishers and their rights and livelihood concerns, with a highlight here being the work of the Coastal Justice Network leading to the recognition of communal rights in the country's environmental law. Another highlight of the One Ocean Hub's work was the award offered to Dr Dylan McGarry and Mpumi Mthombeni for their Animated Film '*Indlela Yokuphila: The Soul's Journey*' which won the Pan African Film Festival Best Animated Film Award: Golden Zebu Award. This film was launched at the UN General Assembly in New York in June 2023, and received a standing ovation from this international policy audience. Key contributions from the One Ocean Hub were an exhibition at the National Arts Festival called 'Our Ocean is Sacred, you Can't Mine Heaven' which was also shown at the EITZ gallery in Cape Town, and contributions at the Climate Change COP 28 hosted in Egypt in December 2023.



Indlela Yokuphila: The Soul's Journey.

The film can be viewed at:
<https://www.youtube.com/watch?v=INm-Yf8Dt10>.

The 1stWeEat! Transforming Education for Sustainable Futures project led by Associate Professor Lausanne Olvitt complemented earlier research done by her and the Makhanda Circle of Unity which mapped out the Makhanda Food System. The 1stWeEat! Project focussed on supporting Early Childhood Centres to strengthen their capabilities for food production and nutrition related education.



Mrs Njadayi, and Early Childhood Development (ECD) practitioner at Esiyazama Pre-School in Makhanda, was one of several practitioners and parents who participated in the 1stWeEat! project that focussed on developing food gardens in local ECD centres

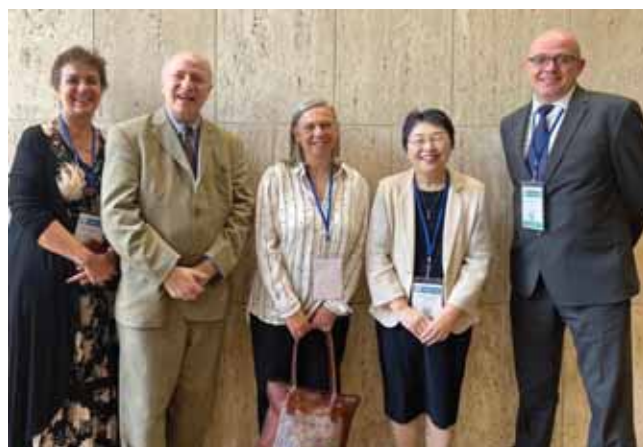
Photo: Department of Secondary and Post-School Education.

in vocational education and training continued with a study on informal VET in the Fisheries industry being completed, and a study on green skills in the aquaculture industry underway. Other studies focussed on learning in eco-cultural communities, and extension services, climate smart food production and skills for enterprise development. A highlight in this stream of work was contributing to the Just Energy Transition Implementation Plan and its skills development chapter, which will guide skills development planning and practice for South Africa's energy transition. A second highlight in this research stream in the area of green skills for citizen-based water quality monitoring led to a UNICEF YOMA (Youth Marketplace) programme in which we are researching youth-led green Learn to Earn pathways, in order to develop short learning programmes for young people across the African continent.

Another feature of the ELRC's research is synthesis studies that help to articulate the contribution of the various studies to system and policy development. Here Professor Lotz-Sisitka, working with **Research Associate Dr Charles Chikunda** and PhD candidates **Reuben Thifulufhelwi** and **Maletje Mponwana** published a book chapter on emancipatory agency and expansive learning in a prestigious book edited by Nick Hopwood and Annalisa Sannino (Cambridge University Press), which was released late 2023. A further aspect of our synthesis work was to pull together lessons learned from across the many Transforming Education for Sustainable Futures projects with Bristol University. We co-hosted a final synthesis conference for this network with international policy actors and researchers

in July 2023, and co-ordinated the final reporting from all of the different hubs. All reports can be downloaded from the tesf.org website.

Synthesis perspectives were integrated into a number of international and national policy processes, including work to mainstream Education for Sustainable Development in the revised national curriculum statement, and the international revision of UNESCO's 1974 Recommendation on Education for International Understanding, Human Rights and Peace. This UNESCO Recommendation is now titled 'Recommendation on Education for Peace, Human Rights and Sustainable Development'. This is a major contribution to global educational policy as all governments are guided by and report against this Recommendation. The Recommendation was adopted by the UN General Assembly in November 2023. Distinguished Professor Lotz-Sisitka was one of twenty-three (23) international experts appointed by the UN to revise the Recommendation.



Distinguished Professor Lotz-Sisitka with international human rights and education colleagues who led the expert group on the Revision of the UNESCO Recommendation.

Photo: Department of Secondary and Post-School Education.

Foregrounding our work on the African continent was the approval of the Future Earth Africa Hub Leadership Centre which is led through a collaborative partnership between the ELRC, the Rhodes University Institute of Water Research and the Institute of Social and Economic Research. In this Rhodes University is partnering with the NRF and the University of Pretoria's Future Africa Hub to strengthen Sustainability Science on the African Continent.

In 2023 we started the scoping study for this programme, as well as establishment of seven (7) science clusters. The ELRC are planning to establish a Science Cluster on African Youth Futures in this Leadership Centre, to strengthen research on African Youth Futures in the context of sustainability education. This will be led by Dr Injairu Kulundu-Bolus from 2024, opening space for attracting scholars from across Africa into this area of new scholarship development which aligns with the Masters degree in Regenerative African Futures and Sustainability Education which she is leading.

Department of Secondary and Post-School Education (DoSPSE)

Books/Chapters/Monographs

Francis, B. and McGarry, D.K.

Francis, B. and McGarry, D.K. (2023) Grandmothers of the Sea. In: Shefer, T., Bozalek, V. and Romano, N. (eds.). *Hydrofeminist Thinking with Oceans: Political and pedagogical possibilities*. London: Routledge. p.173-182. ISBN: 9781032408996.

Lotz-Sisitka, H.

Lotz-Sisitka, H. and McGrath, S. (2023) Introducing VET Africa 4.0. In: McGrath, S., Openjuru, G., Lotz-Sisitka, H.B., Ramsarup, P., Allais, S., Wedekind, V., Monk, D., Adoye, P. and Muhangi, S. (eds.). *Transitioning Vocational Education and Training in Africa A Social Skills Ecosystem Perspective*. Bristol: Bristol University Press. p.1-21. ISBN: 9781529224658.

Lotz-Sisitka, H. (2023) Water, Transport, Oil and Food: A Political-Economy-Ecology Lens on Changing Conceptions of Work, Learning and Skills Development in Africa. In: McGrath, S., Openjuru, G., Lotz-Sisitka, H.B., Ramsarup, P., Allais, S., Wedekind, V., Monk, D., Adoye, P. and Muhangi, S. (eds.). *Transitioning Vocational Education and Training in Africa A Social Skills Ecosystem Perspective*. Bristol: Bristol University Press. p.37-54. ISBN: 9781529224658.

Lotz-Sisitka, H., Openjuru, G. and Zeelan, J. (2023) The Role of the University as Mediator in a Skills Ecosystem Approach to VET. In: McGrath, S., Openjuru, G., Lotz-Sisitka, H.B., Ramsarup, P., Allais, S., Wedekind, V., Monk, D., Adoye, P. and Muhangi, S. (eds.). *Transitioning Vocational Education and Training in Africa A Social Skills Ecosystem Perspective*. Bristol: Bristol University Press. p.139-157. ISBN: 9781529224658.

Lotz-Sisitka, H., McGrath, S., Ramsarup, P., Wedekind, V., Allais, S., Monk, D., Openjuru, G. and Adoye, P. (2023) Afterword: Towards a More Just and Sustainable Research Practice. In: McGrath, S., Openjuru, G., Lotz-Sisitka, H.B., Ramsarup, P., Allais, S., Wedekind, V., Monk, D., Adoye, P. and Muhangi, S. (eds.). *Transitioning Vocational Education and Training in Africa A Social Skills Ecosystem Perspective*. Bristol: Bristol University Press. p.182-187. ISBN: 9781529224658.

Lotz-Sisitka, H. and McGrath, S. (ed.) (2023). *Transitioning Vocational Education and Training in Africa. A Social Skills Ecosystem Perspective*. Bristol: Bristol University Press. ISBN: 9781529224658.

Lotz-Sisitka, H., Durr, S.J. and Metelerkamp, L.

Shetye, N., **Lotz-Sisitka, H.**, Albrecht, E., **Durr, S.J.**, Marx, D., **Metelerkamp, L.** and Van Zyl-Bulitta, V. (2023) Digitalisation and Transformative Learning for Sustainable Futures in Rural Africa: Leaving No One Behind. In: Daniels, C., Erforth, B. and Teevan, C. (eds.). *Africa-Europe Cooperation and Digital Transformation*. London: Routledge. p.199-214. ISBN: 9781032228129.

McGarry, D.K.

McGarry, D.K. (2023) When ancestors are included in ocean decision and meaning-making. In: Shefer, T., Bozalek, V. and Romano, N. (eds.). *Hydrofeminist Thinking with Oceans: Political and pedagogical possibilities*. London: Routledge. p.17-32. ISBN: 9781032408996.

Concerts, Exhibitions, Performances, Workshops, Events

Francis, B.

Francis, B. Workshop. Namibian in-person country workshop. *A One Ocean Hub Project*. Independent Venue, Windhoek. Namibia. 26 January - 3 February 2023.

Francis, B. Workshop. The co-creative workshop. *Sophakama Olwandle and Women in Sewing Projects (One Ocean Hub Office) Collaboration*. Rhodes University, Makhanda. South Africa. 4 - 18 March 2023.

Kaplan, L.J.

Kaplan, L.J. Exhibition. Lore of the Land. *National Arts Festival*. The Monument, Makhanda. South Africa. 22 June - 2 July 2023.

Kulundu, I.M.

Kulundu, I.M. Workshop. Cultural Theories and Politics for Change: Towards Regenerative Futures. *Politics for Futures Youth Teacher Education for SDG 4.7*. Online, Makhanda. South Africa. 30 May 2023.

Kulundu, I.M. Performance. Endogenous Pedagogies in Motion. UNESCO on the Teaching and Learning of African History. UNESCO, Online. <https://www.unesco.org/en/articles/decolonizing-teaching-africas-history?hub=84637>. 25 October 2023.

Kulundu, I.M. Workshop. We Will Dance with Mountains. *Post-activist responses to the global Poly crisis*. Online, Sensorium. Global. 23 September - 17 December 2023.

Kulundu, I.M. Workshop. Be(longing): Reconciliation Through Our Own Decolonial Rites. *The 10th South African Education Research Association (SAERA) Conference*. Premier Hotel ICC, East London. South Africa. 30 October 2023.

Kulundu, I.M. Workshop. Knowledge Interdisciplinary and Power. *Post Graduate Diploma in Sustainability Learning*. Rhodes University, Makhanda. South Africa. 7 - 21 April 2023.

Lotz-Sisitka, H.

Lotz-Sisitka, H. Workshop. Ethical Agency and Moral Authorship of Children and Young People: Implications for Education. *SASUF Pre-Conference Satellite Event*. Rhodes University, Makhanda. South Africa. 27 January - 28 March 2023.

Lotz-Sisitka, H. Observer and International Bureau member. Revision of the 1974 Recommendation concerning education for international understanding, co-operation and peace and education relating to human rights and fundamental freedoms. *Intergovernmental Meeting of Experts (Category II)*. Room II, UNESCO Headquarters, Paris. France. 30 May - 2 June 2023.

Lotz-Sisitka, H. Seminar. International Futures of Green Skills. *Jobs Scenario Building Seminars*. Online, Makhanda. South Africa. 26 September - 25 October 2023.

Lotz-Sisitka, H., Engeström, Y. and Sannino, A. Workshop. Research Design: New perspectives. *SAERA Conference Early Careers Workshop*. Blue Lagoon Hotel, East London. South Africa. 30 October 2023.

Lotz-Sisitka, H. Workshop. Sustainability Starts with Teachers Evaluation. *VCF Research School*. Rhodes University, Makhanda. South Africa. 22 February 2023.

Lotz-Sisitka, H. Workshop. NREF Africa River Commons. *PhD Seminar*. Livingstone College, Livingstone, Zambia. 13 - 17 November 2023.

Mbatha, C., **Lotz-Sisitka, H.**, Odume, N.O. and Hackman, H. Workshop. Future Earth Africa Hub Leadership Centre Workshop. *FEAHL Centre Seminar*. University of Pretoria, Pretoria. South Africa. 27 - 28 November 2023.

Lotz-Sisitka, H. Seminar Participation. Africa Multiple Cluster Ecologies Group Seminar. *AMCEG Group Meeting*. Nairobi, Kenya. 30 November - 3 December 2023.

Lotz-Sisitka, H. and Kulundu, I.M.

Lotz-Sisitka, H. and Kulundu, I.M. Workshop. Ixhesha [Time] for Justice: The African Anthropocene and Beyond Presentation. *British Academy's BA/ZA Time and Just Transitioning Lab Meeting*. Capital 15 on Orange, Cape Town. South Africa. 2 - 6 October 2023.

Lotz-Sisitka, H. and Mponwana, O.W.

Lotz-Sisitka, H. and Mponwana, O.W. Workshop. Mapping Learning Pathways: Green learn2earn pathways with YOMA. *UNICEF YOMA Project Meeting and Workshop*. Groundtruth, Howick. South Africa. 13 - 15 June 2023.

Lotz-Sisitka, H. and Sporre, K.

Lotz-Sisitka, H., Sporre, K., Simmonds, S., Osbeck, C. and Lilja, K. Workshop. Re-thinking ethics in education in times of climate change: values, methods and theories. *South Africa Sweden University Forum Workshop*. University of the Western Cape, Cape Town. South Africa. 29 March 2023.

Lotz-Sisitka, H., Chetty, P. and Chakona, G.

Lotz-Sisitka, H., Chetty, P. and Chakona, G. Workshop. From Tiny Texts to Word Gardens. *Online Academic Journal Writing Course facilitated by Transforming Education for Sustainable Futures (TESF) Environmental Learning Research Centre*. Rhodes University, Makhanda. South Africa. 9 June - 1 August 2023.

Lotz-Sisitka, H., Kaplan, L.J., McGarry, D.K., Kulundu, I.M., Royle, C. and Muhangi, S.

Lotz-Sisitka, H., Kaplan, L.J., McGarry, D.K., Kulundu, I.M., Royle, C. and Muhangi, S. Workshop. An international BA/ZA Time and Just

Transitions Time Lab. *Hosted by the SARChI Chair on Global Change and Social Learning Systems*. Capital 15 on Orange, Cape Town. South Africa. 2 - 7 October 2023.

Lotz-Sisitka, H., Rosenberg, G.J. and Chakona, G.
Lotz-Sisitka, H., Rosenberg, G.J. and Chakona, G. Workshop. Presentation of the ZA Hub Synthesis work. *Transforming Education for Sustainable Futures Synthesis Meeting and Conference*. Ubumwe Grande Hotel, Kigali. Rwanda. 6 - 7 March 2023.

McGarry, D.K.
McGarry, D.K., Coppen, N. and Mthombeni, M. Film. *Umkhosi Wenala. Festival of Abundance*. South Africa. 21 April - 31 December 2023. Youtube, https://www.youtube.com/watch?v=Qb6pS_fIZH0.

McGarry, D.K. Installation/Mixed Media. Purification. *EITZ Gallery*. Burg Street, Cape Town. South Africa. 1 August - 20 November 2023.

McGarry, D.K. Installation/Mixed Media. Purification. *National Arts Festival*. Rhodes University Drama Department, Blue Room, Makhanda. South Africa. 23 June - 3 July 2023.

McGarry, D.K. and Mthombeni, M. Animated Film. *Indlela Yokuphila: The Soul's Journey. Pan African Film Festival best Animated Film award: Golden Zebu Award*. Madagascourt Film Festival, Antananarivo. Madagascar. 6 December 2023.

Mcconnachie, B. and McGarry, D.K. Development and curation. Our Ocean is Sacred, You can't Mine Heaven. *National Arts Festival*. Rhodes Theatre Red Room, Makhanda. South Africa. 23 June - 15 July 2023.

McGarry, D.K. and Mthombeni, M. Animated Film. *Indlela Yokuphila: The Soul's Journey. Launched at the UN General Assembly*. <https://www.youtube.com/watch?v=INm-Yf8D110>. UN Headquarters, New York. USA. 8 June 2023.

McGarry, D.K. and Kaplan, L.J.
McGarry, D.K., Mcconnachie, B., Kaplan, L.J. and Howse, M. Exhibition. Our Ocean is Sacred, You Can't Mine Heaven. *EITZ Gallery*. Burg Street, Cape Town. South Africa. 1 August - 20 November 2023.

Muhangi, S.
Muhangi, S. Workshop. Skills Ecosystem Workshop. *Centre for Researching Education and Labour (REAL) Meeting*. University of the Witwatersrand, Johannesburg. South Africa. 20 - 23 November 2023.

Pereira-Kaplan, T.L.
Pereira-Kaplan, T.L., Mbatha, P. and Morgera, E. Workshop. International and national avenues for the protection of the human rights of small-scale fishers. *One Ocean Hub at FAO IYAF (International Year of Artisanal Fisheries and Aquaculture)*. IYAF, Rome, Italy. 29 March 2023.

Pereira-Kaplan, T.L. Workshop. Solidarity and Participation. *Post Graduate Diploma in Sustainability Learning*. Rhodes University, Makhanda. South Africa. 17 - 21 April 2023.

Pereira-Kaplan, T.L., Francis, B. and McGarry, D.K.
Pereira-Kaplan, T.L., Francis, B. and McGarry, D.K. Workshop. National Small-Scale Fishers Workshop. *Coastal Justice Network and One Ocean Hub - (Rhodes University), Environmental and Geographic Sciences (University of Cape Town), CIPSET (Nelson Mandela University) and Urban Futures Centre (Durban University of Technology) Collaboration*. Nelson Mandela University, Gqeberha. South Africa. 24 - 28 October 2023.

Pereira-Kaplan, T.L., Francis, B., McGarry, D.K. and Erwin, K.
Pereira-Kaplan, T.L., Francis, B., McGarry, D.K., Sunde, J., Sowman, M., Senekal, I. and **Erwin, K.** Workshop. Eastern Cape Small Scale Fishers. *Coastal Justice Network, One Ocean Hub (Rhodes University) and CIPSET (Nelson Mandela University) Collaborative Workshop*. CIPSET, Port Alfred. South Africa. 15 - 18 August 2023.

Pereira-Kaplan, T.L., McGarry, D.K. and Francis, B.
Pereira-Kaplan, T.L., McGarry, D.K. and Francis, B. Workshop. Eastern Cape Small Scale Fishers. *Coastal Justice Network, One Ocean Hub (Rhodes University) and CIPSET (Nelson Mandela University) Collaborative Workshop*. CIPSET, Port Alfred, South Africa. 15 - 18 August 2023.

Pereira-Kaplan, T.L., McGarry, D.K., Francis, B. and Erwin, K.
Pereira-Kaplan, T.L., McGarry, D.K., Francis, B., Erwin, K. and Mbatha, P. Workshop. Using arts-based and knowledge solidarity network approaches for the protection of the human rights of small-scale fishers. *One Ocean Hub at FAO IYAF (International Year of Artisanal Fisheries and Aquaculture)*. IYAF, Rome. Italy. 29 March 2023.

Ramsarup, P. and Lotz-Sisitka, H.
McGrath, S., Ramsarup, P., Lotz-Sisitka, H. and Openjuru, G. Conference Contribution. Online Seminar and Book Launch. *Transitioning Vocational Education and Training in Africa: A Social Skills Ecosystem Perspective*. Online, Makhanda. South Africa. 28 February 2023.

Rosenberg, E.
Rosenberg, E. Workshop. Social Learning and Value Creation Framework Evaluation Tools. *Value Creation Framework (VCF) Research and Practice School*. Rhodes University, Makhanda. South Africa. 20 - 24 February 2023.

Rosenberg, E.
Cockburn, J. and Rosenberg, E. Workshop. Transdisciplinary Education Collaborations for Transforming Sustainability. *Transects Indaba*. Assegai Trails, Makhanda. South Africa. 4 - 6 April 2023.

Simuja, C.
Simuja, C. Research Colloquium Eastern Cape SAARMSTE Chapter. Rhodes University, Makhanda. South Africa. 21 March 2023.

Distinguished Visitors

Hofverberg, H.
Prof H Hofverberg. University of Malmo, Malmo, Sweden. *South Africa Sweden University Forum*. February 2023.

Hungwe, K.
Prof K Hungwe. Michigan Technological University, Michigan, USA. *Carnegie African Diaspora Fellowship program*. May - July 2023.

Osbeck, C. and Lilja, A.
Osbeck C and Prof A Lilja. Gothenberg University, Gothenberg, Sweden. *Doctoral Exchange Programme*. March 2023.

Smits, T.
Prof T Smits. University of Antwerp, Antwerp, Belgium. *NRF Knowledge, Interchange and Collaboration*. September 2023.

Sporre, K.
K Sporre. Umeå University, Umeå, Sweden. *Doctoral Exchange Programme*. March 2023.

Other Publications

Chanyau, L.
Chanyau, L. and Parichi, E. (2023) Improving women's resilience to climate change, Alliance for Food Sovereignty in Africa. In: Reeler, D. and Tertiens-Reeler, B. (eds.). *Stories of change: Agroecology as a climate adaptation approach*. <https://afsafrica.org/wp-content/uploads/2023/06/afsa-stories-2023-high-res-digital-single-pages.pdf>. AFSA: Alliance for Food Sovereignty in Africa.

Francis, B.
Francis, B., Oduro, G.Y., Boateng, K.A. and Morgera, E. (2023) Protecting women's and girl's rights to a healthy environment. In: ICUN. (ed.). *IUCN. International Union for Conservation of Nature: ICUN*.

Lotz-Sisitka, H.
Knudsen, M., Caniëls, M., Dickinson, P., Hery, M., Könnölä, T. and Lotz-Sisitka, H. (2023) Policy Brief: Foresight on Demand (FoD). Futures of Green Skills and Jobs in Europe 2050: Scenario and Policy Implications. In: Knudsen, M., Caniëls, M., Dickinson, P., Hery, M., Könnölä, T. and Lotz-Sisitka, H.B. (eds.). *Futures4Europe Policy Brief 6/2023*. https://www.futures4europe.eu/_files/ugd/b20891_aa373683eb1d470a9d04068039bda39f.pdf. Europe: Foresight on Demand.

Batra, P., Ali, A., Lotz-Sisitka, H. and Tusiime, M. (2023) Tackling Intersecting Inequalities: Call to Action 4. In: Batra, P., Ali, A., Lotz-Sisitka, H.B. and Tusiime, M. (eds.). *Transforming Education for Sustainable Futures*. <https://zenodo.org/records/8158611>. Online: Zenodo.

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Kulundu, I.M.
Kulundu, I.M. Panel Discussion: Wonder, Beauty and the Soul as Important Medicine for Contemporary Educational Research. *The 10th South African Education Research Association (SAERA) Conference*. Premier Hotel ICC, East London. South Africa. October 2023.

Lotz-Sisitka, H.
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Cockburn, J. and Lotz-Sisitka, H. Joined-up learning and knowledge processes for investing in ecological infrastructure for water security. *Garden Route Interface Network*. Not known, Knysna. South Africa. October 2023.

Lotz-Sisitka, H. Keynote: Transformative, Transgressive Learning in Times of Climate Change - Catalysing agency from below. *Scholarship of Teaching and Learning Conference (SOTL in the South)*. Golden Gate National Park, Clarens. South Africa. November 2023.

Lotz-Sisitka, H. Applying for and managing research grants: Locally and internationally. *Future Professors Programme, Phase 2 Brownbag Session*. Online, Makhanda. South Africa. August 2023.

Lotz-Sisitka, H. Discussant: Session 2. *African Human Development Report Meeting*. Makerere University, Online. Uganda. June 2023.

Lotz-Sisitka, H. Opening panel presentation: Contemporary Zeitgeist and Environmental Education research. *European Conference on Education Research*. University of Glasgow, Glasgow. Scotland. August 2023.

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Mbatha, C., Lotz-Sisitka, H. and Odume, N.O. Introducing the Future Earth Africa Hub Leadership Centre. *NRF SRI 2023 Africa Satellite Event*. Nelson Mandela University, Gqeberha. South Africa. June 2023.

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Lotz-Sisitka, H. Plenary Panel Address: Intangible Cultural Heritage and Teacher Education. *Conference on the revision of the Convention for the Intangible Cultural Heritage*. Korea Cultural Heritage Foundation, Seoul. Korea. July 2023.

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Pereira-Kaplan, T.L. Where are small scale fishers in marine spatial planning? *SANBI and One Ocean Hub Science to Policy workshop*. SANBI, Kirstenbosch. South Africa. August 2023.

Pereira-Kaplan, T.L. Ocean Justice on the Wild Coast. *Guest Speaker at the Diocesan School for Girls*. DSG, Makhanda. South Africa. June 2023.

Pereira-Kaplan, T.L. Panel Discussion: Defending the ocean at the kelp roots: Stories from Small scale fisher ocean defenders in South Africa. *GNHRE / UNEP Water Defenders Workshop*. Online, Nairobi. Kenya. March 2023.

Pereira-Kaplan, T.L. Rethinking Blue Economies in terms of environmental and socio-cultural justice - perspectives from South Africa. *Transformations and Transitions: The 2023 GNHRE-UNEP Summer/Winter School*. Online, Nairobi. Kenya. September 2023.

Pereira-Kaplan, T.L. Evaluating for Solidarity. *Value Creation Framework (VCF) Research and Practice School*. Rhodes University, Makhanda. South Africa. February 2023.

Rosenberg, E.

Rosenberg, E. Can Monitoring and Evaluation Advance our Education, Advocacy and Action? Unpacking the TRANSECTS Programme's M&E framework. *Environmental Education Association of Southern Africa (EEASA) 41st Conference*. Glenburn Lodge, Johannesburg. South Africa. September 2023.

Rosenberg, E. Providing South Africa with the teachers it needs - Too much to ask? Researching supply, demand and quality dynamics. *The 10th South African Education Research Association (SAERA) Conference*. Premier Hotel ICC, East London. South Africa. October 2023.

Rosenberg, E. and Mtati, N. Pockets of Social Innovation in Landscapes of Fear? Learning about relational development from the environmental monitors in the Tsitsa Catchment, Eastern Cape. *Skills for a Just Transition Conference*. Wits University, Johannesburg. South Africa. May 2023.

Rosenberg, E. Sustainability in Schooling: Continental Standards for Teacher Education. *5th National Global Change Conference (GCC5)*. Pre-recorded Online Presentation, Bloemfontein. South Africa. January 2023.

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Royle, C.

Royle, C. Social Learning and Regenerative Sustainability: Unlocking value created in sustainability projects in Higher Education (a masters study). *Environmental Education Association of Southern Africa (EEASA) 41st Conference*. Glenburn Lodge, Johannesburg. South Africa. September 2023.

Simuja, C.

Simuja, C. An exploration of learning experiences of technology migrant teachers in rural secondary schools in South Africa. *The 11th Teacher Education and Interdisciplinary Research Conference (TEIR)*. Swakopmund Hotel and entertainment centre, Namibia. April 2023.

Souza, B.

Souza, B. Advancing inclusivity in teacher education through education for sustainable development: A case of teacher training in Malawi. *Environmental Education Association of Southern Africa (EEASA) 41st Conference*. Glenburn Lodge, Johannesburg. South Africa. September 2023.

Souza, B. Reshaping educational futures in teacher education towards inclusive education through ESD praxis in Tanzania and Eswatini. *The 10th South African Education Research Association (SAERA) Conference*. Premier Hotel ICC, East London. South Africa. October 2023.

Van Borek, S.A.

Van Borek, S.A. Water justice issues are shape-shifting: an experiential augmented reality (AR) presentation. *British Academy's BA/ZA Time and Just Transitioning Lab Meeting*. Capital 15 on Orange, Cape Town. South Africa. October 2023.

Van Borek, S.A. Climate for changing lenses: Mobilizing media arts for transgressive learning and research. *Guest lecture for Rhodes University's Master of Education Study Block Week*. Rhodes University, Makhanda. South Africa. June 2023.

Van Borek, S.A. Knowledge Translation, Water Narratives, and Indigenous Knowledge Keepers in Research. *The Confluency Colloquium*. University of Cape Town Future Water research institute, Cape Town. South Africa. June 2023.

Van Staden, W.

Van Staden, W. Keynote Speaker: Rethinking southern Africa's Agriculture to empower our youth and utilise indigenous crops through Education. *Agro Processing Africa Conference*. CSIR Conference Centre, Pretoria. South Africa. July 2023.

Van Staden, W. Strengthening ESD capacity building through digital learning platforms. *Environmental Education Association of Southern Africa (EEASA) 41st Conference*. Glenburn Lodge, Johannesburg. South Africa. September 2023.

Van Staden, W. A review of some of the challenges of online teacher training for sustainability education in southern Africa. *Scholarship of teaching and Learning 4th Biennial Conference (SOTL)*. Golden Gate National Park, Clarens. South Africa. July 2023.

Van Staden, W. Mediating learning in a time of uncertain change. *The 7th International Conference on Advanced Research in Education, Teaching and Learning (ARETL)*. INNSiDE, Berlin. Germany. March 2023.

Van Staden, W. E-Learning Assessment Framework for the Public Service Sector. *Public Service Compliance and HR Convention*. PSETA, Johannesburg. South Africa. March 2023.



FACULTY OF EDUCATION:

Department of Primary and Early Childhood Education (PECE)



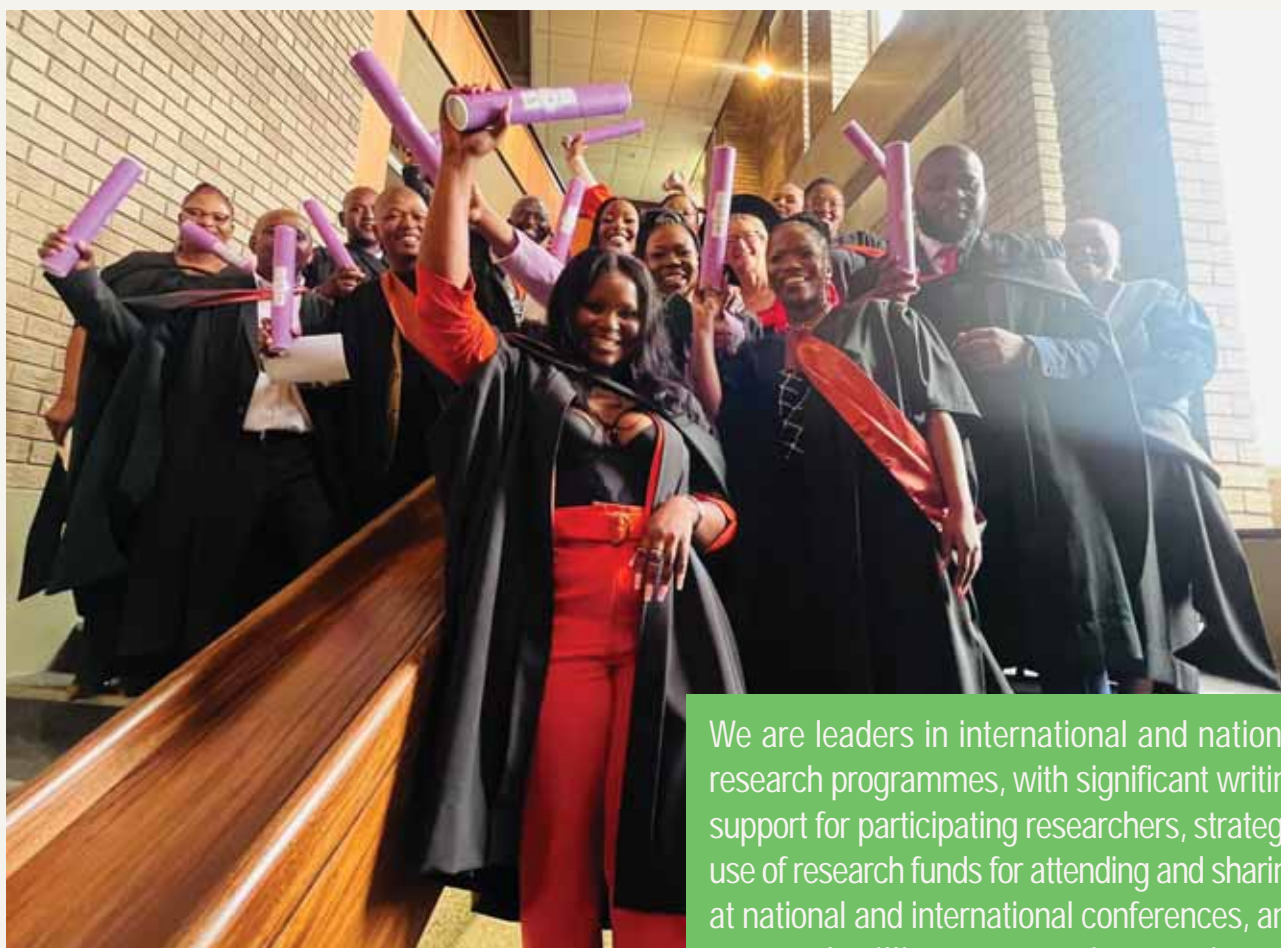
Associate Professor Ingrid Schudel
Head of Department

Introduction

In the Department of Primary and Early Childhood Education (PECE), our 2023 research year has been marked by an extensive list of publications amongst staff, Postdoctoral Fellows, and associates (fourteen (14) chapters and peer reviewed journal articles, fifteen (15) peer reviewed conference papers, and fifteen (15) non-peer-reviewed conference presentations). We have both hosted international visitors as well as been hosted as distinguished guests in other countries. We are leaders in international and national research programmes, with significant writing support for participating researchers, strategic use of research funds for attending and sharing at national and international conferences, and personal willingness to give up time to contribute to the research field on conference committees. Our research is brought into practice through policy engagement and shared with the wider community through creative writing projects and exhibitions. The department looks forward to new research avenues which were seeded through successes in 2023.

Postgraduates / Graduations

A notable success in our Department was involving the Educational Leadership and Management (ELM) Honours students in a collaborative research programme which focused on the development of learner leadership in primary schools, an under-explored area of study. The multi-case study involved each of the twenty (20) students - all in-service teachers - working with primary school learners to develop their leadership using participatory methods such as storytelling, think-pair-share, pass the paper, participatory audio-video and mapping. Their cross-case findings were presented by the Honours group during a panel discussion at the South African Education Research Association (SAERA) conference in East London in



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October/November 2023. Of the twenty (20) Honours students, eight (8) have continued their studies, registering for a MEd (ELM) in 2024.

Postgraduate Fellows in the South African Numeracy Chairs, **Roxanne Long** and **Wellington Hokonya** made significant contributions to the research output of our Department.

Distinguished Visitors / International Visits

PECE assisted in hosting Dr. Marion Mathier, from Switzerland, in August 2023 and the South African Numeracy Chair hosted Professor Peter Grootenboer and Associate Professor Kevin Larkin - Griffith University, Australia in January 2023.

Professor Callie Grant was awarded a Visiting Fellowship by Warwick University for a month to work on a co-edited book, published by Bloomsbury and focusing on research on school leadership preparation and development in sub-Saharan Africa.

Significant Research Aligned Events

Coordinated by Dr Westaway and funded by the Baden-Württemberg Stipendium plus, PECE staff, with the South African Numeracy Chair, participated in the research project:

Enhancing Pre-service and In-service Teachers' Understanding of Place Value in South Africa, Germany and Australia.

In support of research amongst staff across universities, Professor Grant led the USDP programme, facilitating six (6) writing retreats during the year. Furthermore, the South African Numeracy Chair hosted four (4) writing retreats for PECE staff members, SANCP Postgraduate students, senior research associates and international visitors. Also in support of strengthening research, Professor Grant served as the deputy chair of the local organising committee of the South African Education Research Association annual conference.

The South African Numeracy Chair funded PECE staff members, SANCP Postgraduate students, senior research associates and international visitors to attend a range of national and international conferences. These include the Southern African Association for Research in Mathematics, Science and Technology Education (Bloemfontein), Mathematics Education Research Group of Australia (Newcastle, Australia), Centre for Early Childhood Development (Cape Town), South African Research Association

for Early Childhood Education (Cape Town), 1st Place Value conference (Schwabisch Gmund, Germany), and the South African Education Research Association (East London).

Additionally, staff participated in five (5) local/national research conferences: South African Educational Research Conference (SAERA) (for which Professor Grant was on the local organising committee), AFems conference, Rhodes University; Shake the Table 2023 Postgraduate Conference, Rhodes University; Environmental Education Association of Southern Africa (EEASA) & Wildlife Environment Society of South Africa (WESSA) conference, Johannesburg; and the Annual Neville Alexander Conference, Johannesburg. Internationally, staff attended the *Annual SANORD Conference*. Inland Norway University of Applied Science, Hamar, Norway; and an online international online conference: the *Norwegian and Swedish National Network for Researchers on Religious and Ethics Education*.

Research from PECE was fed into national policy engagement in support of the Department of Basic Education at the Fundisa for Change curriculum development workshop - Developing ESD as a Cross Cutting Priority in Johannesburg.

Staff in PECE and South African Numeracy Chair edited a special issue on Early Number Development in the *African Journal of Research in Mathematics, Science and Technology Education*.

At the 2023 South African National Arts Festival (NAF), and in partnership with the Amazwi South African Museum of Literature, Associate Professor Schudel facilitated the sharing of the international CYCLES project research results. This was in the form of photographs and film from an international travelling exhibition featuring the voices of Makhanda youth.

This year Associate Professor Ingrid Schudel was awarded an NRF C2 rating, thus opening up opportunities for supporting a new Science, Technology, Engineering, Arts and Mathematics interdisciplinary research programme in the department.

FACULTY OF

Department of Primary and Early Childhood Education (PECE)

Books/Chapters/Monographs

Grant, C.

Grant, C. (2023) Democratic leadership and education: the case of 'Learners Lead'. In: Woods, P.A., Roberts, A., Tian, M. and Youngs, H. (eds.). *Handbook on Leadership in Education Elgar Handbooks in Education*. UK: Edward Elgar Publishing Limited. p.219-232. ISBN: 9781800880412.

Robertson, S.A. and Graven, M.

Robertson, S.A. and Graven, M. (2023) Exploring the Implications of the Multilingual Turn in Mathematics Education Research for South African Policy-Makers, Researchers and Educators. In: Essien, A. (ed.). *Multilingualism in the teaching and learning of mathematics in Africa: Issues for mathematics education research*. Oxford, UK: Bloomsbury Publishing. p.23-47. ISBN: 9781350369221.

Schudel, I.

Schudel, I., Down, L., McKeown, R., Baumann, S., Petersen, A. and Urenje, S. (2023) Supporting Education for Sustainable Development through an online global forum for teacher educators: An emerging community of practice. In: Guler, N. and Ullom, C. (eds.). *At School in the World: Developing Globally Engaged Teachers*. United States of America: Rowman & Littlefield International. p.286-307. ISBN: 9781538153840.

Peer Reviewed Subsidy-Earning Journal Research Publications

Chikiwa, S. and Graven, M.

Chikiwa, S. and Graven, M. (2023) Exploring the development of South African pre-service teachers' reflective practice. *Pythagoras*. 44 (1). p.1-11.

Graven, M.

Graven, M. and Jorgensen, R. (2023) Early numeracy opportunities through number stories with marginalised families. *ZDM: Mathematics Education*. 1 (1). p.1-15.

Geiger, V., Gal, I. and **Graven, M.** (2023) The connections between citizenship education and mathematics education. *ZDM: Mathematics Education*. 55 (5). p.923-940.

Graven, M. and Venkat, H. (2023) SAARMSTE's role in building and connecting Early Grade Mathematics research: A review of SAARMSTE Proceedings 2003-2022. *African Journal of Research in Mathematics, Science and Technology Education*. 2023 (2023). p.1-19.

Graven, M. and Vale, P.

Venkat, H., **Graven, M.**, Morrison, S. and **Vale, P.** (2023) Early Grade Mathematics: Directions of Growth in the Research Field. *African Journal of Research in Mathematics, Science and Technology Education*. 1 (1). p.1-4.

Morrison, S., **Graven, M.**, Venkat, H. and **Vale, P.** (2023) A 20-year review of South African Early Grade Mathematics research articles. *African Journal of Research in Mathematics, Science and Technology Education*. 2023 (online). p.1-20.

Long, R. and Graven, M.

Long, R. and Graven, M. (2023) Grade R Teacher Expressions of Themselves as Teachers of Early Numeracy Participating in an Intervention Programme. *African Journal of Research in Mathematics, Science and Technology Education*. 27 (3). p.273-289.

Westaway, L.

Westaway, L., Webb, L., Weitz, M. and Botha, H. (2023) Exploring Conceptions of 'Number Sense' Evident in Pre-service Programmes for Primary School Teachers: A Review of Texts Used Across 11 University Programmes. *African Journal of Research in Mathematics, Science and Technology Education*. 2023 (2023). p.1-11.

- Wilmot, D.**
Wilmot, D. (2023) Using COVID-19 as a vehicle for enabling geographical thinking in teacher education. *Journal of Geography Education in Africa (JoGEA)*. 6 (1). p.1-31.
- Wilmot, D.** and Brooks, C. (2023) Addressing global challenges in geographical education: perspectives from the CGE Springer book series. *International Research in Geographical and Environmental Education*. 2023 (2023). p.1-11.
- Wilmot, D.** and Goldschagg, P. (2023) Exploring the inner workings of the Southern African Geography Teachers' Association Google Group. *Journal of Geography Education in Africa (JoGEA)*. 6 (1). p.79-103.

Peer-reviewed Proceedings

- Booyesen, T.I.**
Booyesen, T.I. The Nature of Visual Representation of Multiplication and Division Across Foundation Phase Textbooks. *The 31st Annual Conference of the Southern African Association for Research in Mathematics, Science and Technology Education (SAARMSTE)*. University of the Free State , Bloemfontein. South Africa. January 2023.
- Booyesen, T.I.** and Westaway, L.
Booyesen, T.I. and Westaway, L. The Nature of Multiplication Constructs, Representations, and Strategies in the South African and Australian Curriculum. *The 45th annual conference of the Mathematics Education Research Group of Australasia (MERGA 45)*. University of Newcastle, Newcastle. Australia. July 2023.
- Brown, B.**
Brown, B. Mathematical Insight of Students in a Preservice Primary School Education Programme. *31st Annual Meeting of the Southern African Association for Research in Mathematics, Science and Technology Education*. UFS, Bloemfontein. South Africa. January 2023.
- Graven, M.**
Graven, M. Merging Mathematics Research and Development: Connecting Communities in an Emerging Network of Local and National Projects. *The 45th annual conference of the Mathematics Education Research Group of Australasia*. University of Newcastle, Newcastle. Australia. July 2023.
- Hamsa, H., Askew, M. and Graven, M. Working with early number algebraically: The Mental Starters Assessment Project. *The 13th Congress of the European Society for Research in Mathematics Education (CERME 13)*. Alfréd Rényi Institute of Mathematics and Eötvös Loránd University, Budapest. Hungary. July 2023.
- Hokonya, W.**
Hokonya, W. High School Learners Mathematical Dispositions and The Influences of Mathematics Clubs. *The 45th annual conference of the Mathematics Education Research Group of Australasia (MERGA 45)*. University of Newcastle, Newcastle. Australia. July 2023.
- Lovemore, T.S., Robertson, S.A. and Graven, M.**
Lovemore, T.S., Robertson, S.A. and Graven, M. Using a triple number line to represent multiple constructs of fractions: A task design process and product. *Proceedings of the 45th annual conference of the Mathematics Education Research Group of Australasia*. University of Newcastle, Newcastle. Australia. July 2023.
- Lovemore, T.S., Robertson, S.A. and Graven, M.** Integrating mathematics and music to support fractional reasoning across multiple constructs: A task design journey. *The 31st Annual Conference of the Southern African Association for Research in Mathematics, Science and Technology Education*. University of Free State, Bloemfontein. South Africa. January 2023.
- Robertson, S.A. and Graven, M.**
Robertson, S.A. and Graven, M. Orchestrating Mediation Means in Solving a Mathematical Problem. *The 45th annual conference of the Mathematics Education Research Group of Australasia*. University of Newcastle, Newcastle. Australia. July 2023.
- Robertson, S.A. and Graven, M.** Orchestrating mediational means in solving a mathematical problem. *The 45th annual conference of the Mathematics Education Research Group of Australasia*. University of Newcastle, Newcastle. Australia. July 2023.
- Robertson, S.A. and Graven, M.** Understanding the slow multilingual turn. *The 31st Annual Conference of the Southern African Association for Research in Mathematics, Science and Technology Education (SAARMSTE)*. University of Free State, Bloemfontein. South Africa. January 2023.
- Vale, P. and Graven, M.**
Vale, P. and Graven, M. Teacher-Parent Partnerships in the Post-Covid

Context. *The 45th annual conference of the Mathematics Education Research Group of Australasia*. University of Newcastle, Newcastle. Australia. July 2023.

- Vale, P. and Westaway, L.**
Vale, P. and Westaway, L. Conversations about Place Value: a survey of literature across three international research communities. *45th Annual Conference of the Mathematics Education Research Group of Australasia*. University of Newcastle, Newcastle, NSW. Australia. July 2023.

Westaway, L., Vale, P. and Chikiwa, S.
Westaway, L., Vale, P. and Chikiwa, S. An analysis of the early number sense opportunities in the grades r curriculum and national workbooks. *31st Annual Conference of the Southern African Association for Research in Mathematics, Science and Technology Education*. University of the Free State, Bloemfontein. South African. January 2023.

Westaway, L., Vale, P. and Graven, M.
Westaway, L., Ladel, S., Vale, P., Larkin, K., Graven, M. and Kortenkamp, U. A tri-nation comparative study of place value in early years curricula documents. *45th Annual Conference of the Mathematics Education Research Group of Australasia*. University of Newcastle, Newcastle, NSW. Australia. July 2023.

Research Papers Presented at Academic/Scientific Conferences (Non-peer-reviewed Proceedings)

- Booi, T.**
Booi, T. Research-informed development of isiXhosa teaching and learning materials for doubling and halving in grade 3. *31st Annual Conference of the Southern African Association for Research in Mathematics, Science and Technology Education*. University of the Free State , Bloemfontein. South Africa. January 2023.
- Booi, T. and Long, R.**
Booi, T. and Long, R. Exploring the possible enablers of a numeracy and literacy integrated Family Maths Storytime Programme. *South African Education Research Association (SAERA)*. Premier Regent, East London. South Africa. October 2023.
- Booyesen, T.I., Westaway, L. and Graven, M.**
Booyesen, T.I., Westaway, L. and Graven, M. Exploring the visual representations in South African Foundation phase textbooks. *South African Education Research Association (SAERA)*. Premier Regent, East London. South Africa. October 2023.
- Graven, M.**
Gal, I., Graven, M. and Geiger, V. Connecting citizenship and mathematics education in a time of disruptive events: A 'layers of influence' framework. *South African Education Research Association (SAERA)*. Premier Regent, East London. South Africa. October 2023.
- Graven, M.** What funding model features support grounded research and development interventions to go to scale? The case of the Mental Starters Assessment Programme. *South African Education Research Association (SAERA)*. Premier Regent, East London. South Africa. October 2023.
- Venkat, H. and Graven, M.** Interrogating advantages, dangers, opportunities and challenges of intervention implementation models: South African mathematics project experiences as stimulus for discussion. (SAARMSTE Symposium). *31st Annual Conference of the Southern African Association for Research in Mathematics, Science and Technology Education*. University of the Free State , Bloemfontein. South Africa. January 2023.
- Graven, M. and Venkat, H.** The importance of mental mathematics for supporting Foundation Phase teaching and learning. *South African Research Association for Early Childhood Education (SARAECE)*. College of Cape Town, Cape Town. South Africa. September 2023.
- Graven, M. and Vale, P.**
Graven, M., Morrison, S., Venkat, H. and Vale, P. Analysing the growth of early grade mathematics research in South Africa. *Analysing the growth of early grade mathematics research in South Africa*. College of Cape Town, Cape Town. South Africa. September 2023.
- Hellemann, P.**
Hellemann, P. *Umzi ka mama*: How a select group of Fingo Village female-heads of households transcended 'six mountains on their backs' to acquire family property. *Paper presented at African Feminism Conference*. Rhodes University, Makhanda. 6 - 8 July 2023.
- Hellemann, P.** Politics4Future: Youth teacher engagement Cultural Theories and Politics of Change: Towards Regenerative Futures through storytelling and storymaking. *Paper presented at EEASA 2023*



Edward Horn giving a lecture.

Photo: Chris Marais.

Conference. Glenburn Lodge and Spa, Johannesburg. 18 - 22 September 2023.

Hellemann, P. *Umzi ka Mama: Researching against the grain. Keynote panelist at Postgraduate Conference: Shaking the Table.* Rhodes University, Makhanda. 8 - 9 September 2023.

Hokonya, W.

Understanding mathematical identities of mathematical literacy learners who participated in after-school mathematics clubs in primary school. *31st Annual Conference of the Southern African Association for Research in Mathematics, Science and Technology Education.* University of the Free State, Bloemfontein. South Africa. January 2023.

Kumm, M.L., Graven, M. and Westaway, L.

Exploring Foundation Phase pre-service teachers mathematical pedagogical content knowledge for teaching additive mental mathematics strategies. *The Southern African Association for Research in Mathematics, Science and Technology Education.* University of the Free State, Bloemfontein. South Africa. January 2023.

Long, R. and Boo, T.

Exploring the possible enablers of a numeracy and literacy integrated Family Maths Storytime Programme. *South African Research Association for Early Childhood Education (SARAECE).* College of Cape Town, Cape Town. South Africa. September 2023.

Long, R. and Graven, M.

Grade R Teacher Changing Expressions of Themselves as Teachers of Numeracy. *31st Annual Conference of the Southern African Association for Research in Mathematics, Science and Technology Education.* University of the Free State, Bloemfontein. South Africa. January 2023.

Schudel, I.

Interdisciplinarity and Trans-disciplinarity in Education: Case examples from South Africa. *Invitational presentation by the BRIDGES research project for the Annual SANORD Conference.* Inland Norway University of Applied Science, Hamar, Norway. September, 2023.

Schudel, I.

Powerful Knowledges as Situated Knowledges. *Invitational online presentation for the Norwegian and Swedish National Network for Researchers on Religious and Ethics Education.* Gothenburg, Gothenburg. South Africa. 20 - 21 April 2023.

Vale, P. and Westaway, L.

The development of pre-service teachers competence to teach mental calculation strategies. *South African Education Research Association (SAERA).* Premier Regent, East London. South Africa. October 2023.

DEPARTMENT OF Environmental Science



Professor Gladman Thondhlana
Head of Department

Introduction

The Department of Environmental Science produced a sizeable number of publications. These consisted of twenty-five (25) papers in peer-reviewed subsidy earning journals, five (5) book chapters, and two (2) papers in non-peer-reviewed conference proceedings. Staff participated in various research conferences and workshops both locally and internationally, and served on several national and international organisations.

Postgraduates / Graduations

We have a healthy number of two (2) Postdoctoral Fellows and Postgraduate students (nineteen (19) PhD; twenty-one (21) Masters and fifteen (15) Honours). Six (6) masters students and three (3) PhD candidates graduated in 2023. As usual, Postgraduates were significant contributors to the outputs of the Department. During 2023 Postdoctoral Fellows (**Opeyemi Adeyemi** and **Gizele Sinasson Sanni**) and former and current PhD candidates (**Mallika Sardeshpande**, **Thozamile Yapi**, **Uzziah Mutumbi**), a Masters student (**Papama Yose**) and Honours students (**Oscar Wootton** and **Nobomi Ngalo**) were lead or co-authors on journal publications. We regard this as a vital part of the research process, which also strengthens the research experience and credentials of the Postgraduates after they leave the Department.

Significant Research Aligned Events

- **Professor Gladman Thondhlana** participated as an invited guest at the International Conference on Human-Wildlife Conflict and Coexistence from 30 March - 1 April 2023, Oxford, UK; Biodiversity Convention - From Science to Implementation, 26 - 29 June 2023, Monte Verità, Switzerland; Urban Resilience 5th Lecture, 5 March 2023, University of British Columbia, Canada (virtual) and The Human-Wildlife Interactions in Conservation Translocations working group, 7 November 2023 (virtual).

The Biodiversity Convention - From Science to Implementation conference held in Monte Verità, Switzerland.
Photo: Department of Environmental Science.



- In partnership with the Environmental Learning Research Centre (ERLC, in the Faculty of Education), Dr Jessica Cockburn of DES hosted visitors from the international TRANSECTS partnership in April 2023. We welcomed Distinguished Professor Maureen Reed, Professor Wendy James and Ms Marlis Merry from the University of Saskatchewan in Canada, along with Ms Jana Gengelbach from Eberswalde University of Sustainable Development in Germany to South Africa and the Eastern Cape to build our partnership and explore challenges and opportunities for the work of the TRANSECTS project in South Africa. The visit was focused on the TRANSECTS South Africa Indaba, a mini conference hosted at Assegaai Trails from 3 - 6 April 2023. This event was preceded by a field trip to the Vhembe Biosphere Reserve and the Garden Route Biosphere Reserve. One of the key events which TRANSECTS hosts annually are TILLs: Transdisciplinary International Learning Labs. The TRANSECTS SA team, led out of Rhodes University, facilitated a scoping field trip to two Biosphere Reserves to identify suitable locations for hosting the South African TILL in 2025. The TILLs offers not only unique transdisciplinary learning opportunities for Postgraduate scholars and Biosphere Reserve Partners, but also enables collaborative teaching and research for members of the TRANSECTS network located across numerous South African universities including Nelson Mandela University, University of Mpumalanga, University of Venda, and WITS University. For further information on TRANSECTS, see the website: <https://sens.usask.ca/transects/index.php>
- Distinguished Professor Charlie Shackleton's NRF SARChI Chair was renewed for the second and final 5-year cycle.

Environmental Science

Books/Chapters/Monographs

Likongwe, P. and Shackleton, C.M.

Thorn, J., Nero, B., **Likongwe, P.**, Nyirambangutse, B. and **Shackleton, C.M.** (2023) Urban forests: A perspective from sub-Saharan Africa. In: Borelli, S., Conigliaro, M. and Di Cagno, F. (eds.). *Urban forests: a global perspective*. Rome: Food and Agriculture Organization of the United Nations (FAO). p.1-228. ISBN: 9789251382691.

Shackleton, C.M.

Kull, C. and **Shackleton, C.M.** (2023) The shifting place of Australian Acacia species around the world: Adoption, uses, and perceptions. In: Richardson, D.M., Le Roux, J.J. and Marchante, E. (eds.). *Wattles: Australian Acacia species around the world*. Wallingford, UK: CABI. p.250-264. ISBN: 9781800622173.

Thondhlana, G.

Roe, D., **Thondhlana, G.**, Hill, C. and Roy, S. (2023) Livelihoods, poverty, and well-being. In: Zimmerman, A. and Inskip, C. (eds.). *IUCN SSC guidelines on human-wildlife conflict and coexistence*. Gland, Switzerland: IUCN. p.74-79. ISBN: 9782831722344.

McQuinn, B., Zimmerman, A., Stevens, J. and **Thondhlana, G.** (2023) Dialogue: A process for conflict resolution. In: Zimmerman, A. and Inskip, C. (eds.). *IUCN SSC guidelines on human-wildlife conflict and coexistence*. Gland, Switzerland: IUCN. p.105-110. ISBN: 9782831722344.

Linnell, J., **Thondhlana, G.** and Hedges, S. (2023) Assessing the impacts of conflicts. In: Zimmerman, A. and Inskip, C. (eds.). *IUCN SSC guidelines on human-wildlife conflict and coexistence*. Gland, Switzerland: IUCN. p.37-40. ISBN: 9782831722344.

Concerts, Exhibitions, Performances, Workshops, Events

Cockburn, J.

Cockburn, J. and **Rosenberg, E.** Workshop. Transdisciplinary Education Collaborations for Transforming Sustainability. *Transects Indaba*. Assegai Trails, Makhandia. South Africa. 4 - 6 April 2023.

Other Publications

Shackleton, C.M.

Shackleton, C.M. (2023) Forests for Human Health - Understanding the Contexts, Characteristics, Links to Other Benefits and Drivers of Change. In: *Forests and Trees for Human Health: Pathways, Impacts, Challenges and Response Options*. Austria: International Union of Forest Research Organizations (IUFRO).

Peer Reviewed Subsidy-Earning Journal Research Publications

Adeyemi, O. and Shackleton, C.M.

Adeyemi, O. and **Shackleton, C.M.** (2023) Street tree abundance, composition, and (mal)distribution in Lagos Metropolis, Nigeria. *Trees, Forests and People*. 15 (2024). p.1-9.

Adeyemi, O. and **Shackleton C.M.** (2023). Understanding foraging practices in Lagos metropolis to redesign urban greenspaces in support of human-nature interactions. *Urban Forestry & Urban Greening*. 79: 127805.

Bellon De La Cruz, B.

de Oliveira Roque, F., Bellon De La Cruz, B., Guerra, A., Valente-Neto, F., Santos, C.C. and *et al.* (2023) Incorporating biodiversity responses to land use change scenarios for preventing emerging zoonotic diseases in areas of unknown host-pathogen interactions. *Frontiers in Veterinary Science*. 10 (2023). p.1-12.

Cockburn, J.

Raschke, A.B., **Cockburn, J.**, Cisneros, P., Ocampo-Melgar, A., Schoon, M., Kelman, C.C. and Srinivasan, J. (2023) Learning from sticky variables in cross-case analyses of collaboration in social-ecological systems. *Ecosystems and People*. 19 (1). p.1-14.

Cockburn, J. and **Mtati, N.**

Weaver, M.J.T., **Cockburn, J.**, **Mtati, N.** and **Palmer, C.G.** (2023) Exploring transformative processes at the intersections of land, water, and livelihoods: A case study from the Tsitsa Project, South Africa. *Ecosystems and People*. 19 (1). p.1-21.

Cockburn, J., **Cundill, G.**, **De Vos, A.** and **Shackleton, C.M.**

Biggs, R., Reyers, B., Blanchard, R., Clements, H., **Cockburn, J.**, Cumming, G.S., **Cundill, G.**, **De Vos, A.**, Dziba, L., Esler, K., Fabricius, C., Haman, M., Henriksson, R., Kotschy, K., Lindborg, R., Luvuno, L., Masterson, V., Nel, J.L., O'Farrell, P., Palmer, C.G., Pereira, L., Pollard, S., Preiser, R., Roux, D., Scholes, R., Selomane, O., **Shackleton, C.M.**, Shackleton, S., Sitas, N., Slingsby, J.A., Spierenburg, M. and Tengö,



A TRANSECTS partnership scoping field trip in the Vhembe Biosphere Reserve in Limpopo, organised in partnership with colleagues at the University of Venda. The purpose of the trip was to build relationships and explore the potential of hosting future Transdisciplinary International Learning Labs (TILLS) in the Vhembe Biosphere Reserve.

Photo: Marlis Merry.



The TRANSECTS South Africa Indaba held at Assegai Trails in the Eastern Cape from 3 - 6 April 2023 brought together researchers, students and practitioners to explore the opportunities and challenges of transdisciplinary research, teaching and learning for sustainability.

Photo: Enya Munting.

M. 2023. The Southern African Program on Ecosystem Change and Society: an emergent community of practice. *Ecosystems & People*. 19: 2150317.

Cundill, G.

Scodanibbio, L., **Cundill, G.**, McNamara, L. and du Toit, M. (2023) Effective climate knowledge brokering in a world of urgent transitions. *Development in Practice*. 33 (2023). p.1-7.

De Vos, A.

Pascual, U., Balvanera, P., Anderson, C., Chaplin-Kramer, R., **De Vos, A.** and *et al.* (2023) Diverse values of nature for sustainability. *Nature*. 620 (2023). p.813-823.

Kelemen, E., Subramanian, S.M., **De Vos, A.**, Amaruzaman, S., Porter-Bolland, L., Israr, M., Kosmus, M. and *et al.* (2023) Signposts on the road toward transformative governance: how a stronger focus on diverse values can enhance environmental policies. *Current Opinion in Environmental Sustainability*. 64 (2023). p.1-11.

Hebinck, P.

Hebinck, P., Smith, L. and Aliber, M. (2023) Beyond technocracy: The role of the state in rural development in the Eastern Cape, South Africa. *Land Use Policy*. 126 (2023). p.1-11.

Mabunda, M.J. and Ruwanza, S.

Mabunda, M.J. and Ruwanza, S. (2023) Effects of Ridges and Furrows on Passive Vegetation Recovery in Oldfields. *Ecological Restoration*. 41 (2-3). p.74-78.

Mthethwa, K. and Ruwanza, S.

Mthethwa, K. and Ruwanza, S. (2023) Topsoil and Vegetation Dynamics 14 Years after Eucalyptus grandis Removal in Eastern Cape Province of South Africa. *Plants*. 12 (17). p.1-11.

Ngalo, N. and Thondhlana, G.

Ngalo, N. and Thondhlana, G. (2023) Illegal Solid-Waste Dumping in a Low-Income Neighbourhood in South Africa: Prevalence and Perceptions. *International Journal of Environmental Research and Public Health*. 20 (18). p.1-11.

Sardeshpande, M. and Shackleton, C.M.

Sardeshpande, M. and Shackleton, C.M. (2023) Fruits in the city: The nature, nurture, and future of urban foraging. *People and Nature*. 5 (1). p.213-227.

Shackleton, C.M. and Ntshudu, M.E.

Shackleton, C.M. and Ntshudu, M.E. (2023) Declines in Livestock Numbers Accompany Cropping Deagrarianisation Processes in the Eastern Cape, South Africa. *Land*. 12 (9). p.1-14.

Shackleton, C.M. and Sinasson Sanni, K.G.

Shackleton, C.M., Garekae, H., Sardeshpande, M., **Sinasson Sanni, K.G.** and Twine, W. (2023) Non-timber forest products as poverty traps: Fact or fiction? *Forest Policy and Economics*. 158 (103114). p.1-9.

Shwababa, S.

Madondo, R., Tandlich, R. and Schwababa, S. (2023) Fire disaster management in South Africa: Look at statistics and impacts. *Journal of Emergency Management*. 21 (8). p.1-11.

Sibiya, S. and Gambiza, J.

Sibiya, S., Clifford-Holmes, J.K. and Gambiza, J. (2023) Drivers of Degradation of Croplands and Abandoned Lands: A Case Study of Macubeni Communal Land in the Eastern Cape, South Africa. *Land*. 12 (3). p.1-11.

Sinasson Sanni, K.G. and Shackleton, C.M.

Sinasson Sanni, K.G. and Shackleton, C.M. (2023) The concurrent impacts of drought and leaf harvesting on two traditional African vegetable non-timber forest product species. *PLoS ONE*. 18 (4). p.1-19.

Thondhlana, G. and Ruwanza, S.

Thondhlana, G., Amaka-Otchere, A. and **Ruwanza, S.** (2023) Encouraging household energy conservation through transdisciplinary approaches in Ghana and South Africa: Assumptions, challenges, and guidelines. *International Journal of Urban Sustainable Development*. 15 (1). p.1-15.

Tshikombeni, O., Shackleton, C.M. and Ntshudu, M.E.

Tshikombeni, O., Shackleton, C.M. and Ntshudu, M.E. (2023) Low knowledge of national biodiversity symbols among urban South Africans limits their potential value as conservation flagship species. *People and Nature*. 6 (1). p.107-116.

Weideman, C.I.

Petit, M., Celis, C., **Weideman, C.I.**, Gouin, N. and Bertin, A. (2023) Effects of land cover and habitat condition on the bird community along a gradient of agricultural development within an arid watershed of Chile. *Agriculture, Ecosystems and Environment*. 356 (2023). p.1-12.

Wootton, O. and Shackleton, C.M.

Wootton, O. and Shackleton, C.M. (2023) The prevalence, uses and cultural assimilation of shrub and tree invasive alien plants in a biodiversity hotspot along the Wild Coast, South Africa. *Ecosystems and People*. 19 (1). p.1-11.

Yapi, T.S. and Shackleton, C.M.

Yapi, T.S., **Shackleton, C.M.**, Le Maitre, D. and Dziba, L. (2023) Local peoples' knowledge and perceptions of Australian wattle (Acacia) species invasion, ecosystem services and disservices in grassland landscapes, South Africa. *Ecosystems and People*. 19 (1). p.1-16.

Yose, P. and Thondhlana, G.

Yose, P., **Thondhlana, G.** and **Fraser, G.** (2023) Conceptualizing the socio-cultural impacts of marine plastic pollution on human well-being-A perspective. *Marine Pollution Bulletin*. 194 (A). p.1-7.

Peer-reviewed Proceedings

Weideman, C.I.

Weideman, C.I., **Palmer, A.R.**, **Palmer, C.G.** and Smart, K. Differences in carbon sequestration and water use between a semi-arid native grassland and encroaching Vachellia karroo woodland. *International Grassland Congress*. Covington, Kentucky. USA. October 2023.

Research Papers Presented at Academic/Scientific Conferences (Non-peer-reviewed Proceedings)

Cockburn, J.

Cockburn, J. and **Lotz-Sisitka, H.** Joined-up learning and knowledge processes for investing in ecological infrastructure for water security. *Garden Route Interface Network*. Not known, Knysna. South Africa. October 2023.

Cockburn, J. Social learning through university-community partnerships: A case study of land and water management. *Community Engagement Learning Symposium*. Rhodes University, Makhanda. South Africa. May 2023.

Ngwenya, D.K., **Cockburn, J.** and **Rosenberg, E.** Evaluation of the institutional support for transdisciplinary research, teaching and learning in higher education. *Transdisciplinary Education Collaborations for Transforming Sustainability (TRANSECTS) Transdisciplinarity Programme Meeting*. Eberswalde University, Eberswalde. Germany. October 2023.

Cockburn, J., Masterson, V. and Mtati, N.

Cockburn, J., **Masterson, V.** and **Mtati, N.** Re-focusing stewardship on stewards: Place-based insights on diversity, relationality, and the politics of land. *Garden Route Interface Network*. Not known, Knysna. South Africa. October 2023.

Mothupi, F.M. and Shackleton, C.M.

Mothupi, F.M. and Shackleton, C.M. Perceptions of the use, consumption, and commercialization of wild edible plants. *25th Indigenous Plant Use Forum*. Not known, Skukuza. South Africa. August 2023.

Mtati, N.

Rosenberg, E. and **Mtati, N.** Pockets of Social Innovation in Landscapes of Fear? Learning about relational development from the environmental monitors in the Tsitsa Catchment, Eastern Cape. *Skills for a Just Transition Conference*. Wits University, Johannesburg. South Africa. May 2023.

Shackleton, C.M.

Towns, A. and **Shackleton, C.M.** Traditional, indigenous, or leafy? A definition, typology, and way forward for African vegetables. *Society for Economic Botany Annual Conference*. Not known, Atlanta. USA. June 2023.

Shackleton, C.M. Towards inclusive cities through equity in urban green infrastructure with an emphasis on South Africa. *2nd World Forum on Urban Forests: pre-forum webinar on inclusive cities*. Not known, virtual. virtual. September 2023.

DEPARTMENT OF Fine Art



Associate Professor Maureen de Jager
Head of Department

Introduction

The Department of Fine Art had a very productive research year, with numerous and noteworthy outputs generated by our staff, Postgraduates, and SARCHI Research Associates and Fellows. Highlights included: five (5) subsidy-earning journal publications; several contributions to important books and catalogues; three (3) keynote addresses by staff at conferences and symposia; three (3) solo exhibitions by staff; four (4) examination exhibitions by Master of Fine Art students; and various international visits by staff and Fine Art PhD candidates, to foster notable research partnerships and collaborations. For such a small Department, our research productivity remains considerable and significant.

Postgraduates / Graduations

During 2023, the first cohort of candidates in the newly developed Fine Art PhD programme, **Raphaella Linders**, **Jarrett Erasmus**, and **Simone Heymans**, travelled with their supervisor and programme co-ordinator, **Associate Professor Maureen de Jager**, to the United Kingdom, to participate in the *Kingston School of Art Doctoral Research Week* (6 - 10 March 2023). The initiative formed part of an ongoing partnership established by Professor De Jager with Kingston University (London). PhD candidate Linders also presented at an international conference, the *Seventh Annual Conference of the Memory Studies Association* convened by Newcastle University, United Kingdom. The Fine Art Department hosted four (4) Master of Fine Art examination exhibitions: *It's an African Proverb: A Biomythography* by N'lamwai Chithambo; *A Second Skin* by Juanito Featherstone; *Vuleka Mhlaba* Ndingene by Viwe Madinda; and *Twee Kante van 'n Storie* by Tasmin Randall.

NRF SARCHI PhD candidate, **Lifang Zhang** co-published a book with Research Associate, **Ying Cheng** on art and the cultural politics of the everyday in Africa. The book was published in Mandarin by Peking University Press. Zhang also presented at two (2) international conferences, and she and PhD candidate



Installation view of Christine Dixie's solo exhibition, *Blueprint for the DisOrder of Things*, at Meno Parkas Gallery in Kaunas, Lithuania.
Photo: Department of Fine Art.

Barnabas Muvhuti wrote numerous essays and reviews for online arts platforms. Muvhuti also published a chapter in a handbook on forced migration. SARCHI PhD candidate, **Binjun Grobbelaar Hu** and MFA student **Viwe Madinda** co-curated the first solo exhibition by the Makhanda-based artist, **Nompumelelo Edith Bukani**. This exhibition took place at the RAW Spot Gallery during the 2023 National Arts Festival and was supported by the NRF SARCHI programme. **Fadzai Muchemwa**, MA student with the SARCHI programme, curated five (5) exhibitions, one (1) in Canada and four (4) in Zimbabwe.

Distinguished Visitors / International Visits

Professor Ruth Simbao was invited by Dr Ugochukwu-Smooth Nzewi, Curator of the Museum for Modern Art (MoMA) in New York, to co-edit a book with him and Professor Salah Hassan at the Africa Institute in Sharjah, United Arab Emirates. The anthology is the first to focus on Africa in the MoMA book series, *Primary Documents*, and it brings together crucial art historical writings and primary source materials that contribute to the shaping of African modernisms. Co-editors met at the Africa Institute in Sharjah with the Advisory Board and other key scholars in the area of modernisms of Africa and the African diaspora. Extending her NRF SARCHI research on Africa-China and the arts, Simbao also travelled to St. Helena Island in the South Atlantic Ocean to conduct research on oceanic convergence and global encounter with Africa and Asia. She also spent a month in Tanzania and Zambia, working on the

documentary film, *Tulelosha (We are mourning)*, which is about the Chinese-built TAZARA memorial in Zambia.

Associate Professor De Jager was invited to participate in the *Kingston School of Art Doctoral Research Week*, hosted by Kingston University (London), where she presented a performance-lecture titled 'Writing (as) passage' as part of Kingston School of Art's inaugural *PhD Alumni Event*. She was later invited to contribute as an expert participant in a course on *Supervising Artistic and Practice-based Research*, hosted by Utrecht University, Netherlands, in August 2023. Both visits have served to strengthen the Rhodes University Fine Art PhD programme, through the establishment of networks with an international practice-based research community.

Significant Research Aligned Events

Fine Art staff members and Research Associates were very active in presenting and exhibiting their creative research, curating exhibitions, producing publications and participating in conferences and symposia.

Lecturer **Robyn Munnick** was selected to participate in the Nando's Creative Exchange (NCX) for 2023. In partnership with Spier Arts Trust, NCX is a flagship programme which recognises emerging South African artists who demonstrate exceptional ability. Munnick created a body of work titled *Transpose* which explores a shift of (re)location by contrasting the unfamiliar with the familiar. Her work was exhibited at the GFI Art Gallery,

Installation view of Maureen de Jager's solo exhibition, *History [TBC]: Refocusing the South African War*, at GUSGallery in Stellenbosch.

Photo: Department of Fine Art.



Gqeberha, from December 2023 to January 2024, as the first of three exhibition locations around South Africa.

Senior Lecturer **Christine Dixie** exhibited her solo exhibition, *Blueprint for the DisOrder of Things*, at Meno Parkas Gallery in Kaunas, Lithuania; and contributed new works to a group exhibition, the *Spier Light Art Festival*, in Stellenbosch. **Professor Dominic Thorburn** contributed works to two group exhibitions: *Paintings of The City* at Nelson Mandela Metropolitan Art

Museum, Gqeberha; and *In the Eye Of The Beholder* at Albany Museum, Makhanda. Professor De Jager exhibited her solo exhibition, *History [TBC]: Refocusing the South African War*, on two occasions, at Cory Library (Makhanda) in June - July 2023 and at GUS (Stellenbosch) in September-October 2023. She also delivered a keynote address in Makhanda, as part of the Biennial Conference of the Historical Association of South Africa.

Senior Lecturer **Dr Thembinkosi Goniwe** curated an exhibition by Blessing Ngobeni, titled *Blessing Ngobeni: Ntsumi Ya Vutomi*, which was hosted by the Standard Bank Gallery in Johannesburg. He also edited a catalogue accompanying the exhibition (published by Everard Read), and contributed an essay titled 'Curatorial Musing on Blessing Ngobeni: Ntsumi Ya Vutomi'. In addition, Dr Goniwe curated 'South African Innovations, 1980s-2020s' which formed part of *Arte Povera and South African Art: In Conversation* held at the Wits Art Museum, Johannesburg. He also participated in two symposia: the *Ukulandela Umoya Visual Art Colloquium* at the University of Fort Hare, Alice, where he delivered a keynote address; and the *Politics, Art and Nation, Actuvirtual Symposium*, convened by the Johannesburg Institute for Justice Studies, where he acted as a discussant.

Associate Professor Stephen Fóláránmí published two subsidy-earning journal articles, one in *Journal of Art Historiography* and another in *The Nigerian Field*. He also participated in four international conferences and symposia: a conference and exhibition hosted by the University of Education Ludwigsburg, Germany; the *6th Conference of the Sculptors Association of Nigeria* held in Abraka, Nigeria; the *111th College Art Association (CAA) Conference* in New York, USA; and *The State of Indigenous Studies: Views from Africa, Latin America, and North America*, convened by the University of Virginia, USA, where he delivered a keynote address.

Lecturer **Dr Lois Anguria** published a subsidy-earning journal article, 'An Intersectional Reading of Senzeni Marasela's Work: Making Visible the Marginalised Lived Experiences of Black South African Women in States of Perpetual Waiting', in the peer-reviewed journal *De Arte*. Lecturer **Sikhumbuzo Makandula** contributed 'Makhanda Ngoku!' to the *Transforming Education for Sustainable Futures* conference in April 2023.

Professor Simbao is a member of the Africa Multiple Cluster of Excellence and the Rhodes African Studies Centre (RASC). As part of the cluster research, she extended her research on art, activism and social justice, which examines performative interventions in processes of memorializing African and Chinese comrades who were buried in Zambia from the 1960s to 1980s. Two of her Postdoctoral Fellows, **Dr Tume** and **Dr Ogunjimi** participated in the RASC seminar series, and Simbao continued her collaboration with the Memory working group to develop a proposal to extend the Africa Multiple Cluster funding.

Research Associate, **Dr Veronica Tello**, who collaborates with the NRF SARChI programme in *Geopolitics and the Arts of Africa*, published a book with Professor Ruth Simbao and others on art, place and history in global south contexts. This book includes a contribution by former SARChI MA student, **Jean-Sylvain Tshilumba**.

DEPARTMENT OF

Fine Art

Books/Chapters/Monographs

Muvhuti, B.T.

Muvhuti, B.T. (2023) Narrative: Life in South Africa: Irresistible soft power meets the hard reality. In: Jacobsen, K. and Majidi, N. (eds.). *Handbook on Forced Migration*. Edward Elgar Publishing. p. 415-416. ISBN: 9781839104961.

Simbao, R.

Simbao, R. (2023). Global Art: Stepping Nimbly with Strategic Southernness. In: *Future Souths: Dialogues on Art, Place and History* by Tello, V. with Miner, D., Butt, Z., Hernandez, E., Lopez, R., Macchiavello, C., Mignolo, W., O'Reilly, R., and Simbao, R. London and Melbourne/Naarm: Third Text Publications and Discipline. ISBN: 9780994538863.

Tello, V. and Simbao, R.

Tello, V. with Miner, D., Butt, Z., Hernandez, E., Lopez, R., Macchiavello, C., Mignolo, W., O'Reilly, R., and **Simbao, R.** (2023). *Future Souths: Dialogues on Art, Place and History*. London and Melbourne/Naarm: Third Text Publications and Discipline. ISBN: 9780994538863.

Concerts, Exhibitions, Performances, Workshops, Events

Chithambo, N.L.

Chithambo, N.L. Solo Exhibition (MFA). *It's an African Proverb: A Biomythography*. Rhodes University Main Fine Art Building, Grahamstown. South Africa. 30 January 2023.

De Jager, M.S.

De Jager, M.S. Solo Exhibition. *History [TBC]: Refocusing the South African War*. Cory Library, Rhodes University, Makhanda. South Africa. 27 June - 26 July 2023.

De Jager, M.S. Solo Exhibition. *History [TBC]: Refocusing the South African War*. GUS, Stellenbosch. South Africa. 19 September - 13 October 2023.

Dixie, C.B.

Dixie, C.B. Solo Exhibition. *Blueprint for the DisOrder of Things*. Meno Parkas Gallery, Kaunas, Lithuania. 13 July - 6 August 2023.

Dixie, C.B. Group Exhibition. Ghostprints for the Infanta. *Spier Light Art Festival*. Stellenbosch, South Africa. 10 March - 10 April 2023.

Featherstone, J.R.

Featherstone, J.R. Solo Exhibition (MFA). *A Second Skin*. Rhodes University School of Art Gallery, Grahamstown. South Africa. 10 February 2023.

Fóláránmí, S.A.

Fóláránmí, S.A. Workshop. *Contemporary Prospects and Challenges in the Production of Multilingual Animation Cartoons*. Obafemi Awolowo University, Ilé-Ife. Nigeria. 28 August 2023.

Fóláránmí, S.A. Group Exhibition. Roses Will Bloom Again. *Beyond Onaism: Best of Ifè @30*. Fobally Art World Africa, Lagos. Nigeria. 3 - 9 December, 2023.

Goniwe, T.

Goniwe, T. Curating. South African Innovations, 1980s-2020s (group exhibition). *Arte Povera and South African Art: In Conversation*. Wits Art Museum, Johannesburg, South Africa. 31 October - 9 November 2023.

Goniwe, T. Curating. *Blessing Ngobeni: Ntsumi Ya Vutomi* (solo exhibition). Standard Bank Gallery, Johannesburg, South Africa. 3 August - 15 September 2023.

Grobbelaar, B.J.

Grobbelaar, B.J. Seminar Presentation. Noise or Message: A Tang cobalt blue decorated plate in mobility autobiographies. *African Studies Centre Research Seminar*. Rhodes University, Grahamstown. South Africa. 24 October 2023.

Grobbelaar, B.J. and Madinda, V.

Grobbelaar, B.J. and Madinda, V. Curating. *My name will be mine one day* (exhibition by Nompumelelo Edith Bukani). Raw Spot Gallery, Rhodes University, Grahamstown. South Africa. 22 June - 2 July 2023.

Madinda, V.
Madinda, V. Solo Exhibition (MFA). *Vuleka Mhlaba Ndingene*. Raw Spot Gallery, Rhodes University, Grahamstown. South Africa. 10 February 2023.

Muchemwa, F.V.
Muchemwa, F.V. Curating. *The Oxymoronic Tea Party: From Away* (solo exhibition). Fogo Island, Fogo Island. Canada. 15 September 2023.

Muchemwa, F.V. Curating. *'Ndiani Mambo'. Remembering Anthony Bumhira* (solo exhibition). National Gallery of Zimbabwe, Harare. Zimbabwe. 5 October - 31 December 2023.

Muchemwa, F.V. Curating. *Love and Other Acts of Will* (group exhibition). National Gallery of Zimbabwe, Harare. Zimbabwe. 5 October - 31 December 2023.

Muchemwa, F.V. Curating. *A Gathering* (group exhibition). National Gallery of Zimbabwe, Harare. Zimbabwe. 16 June - 20 November 2023.

Muchemwa, F.V. Curating. *Vestiges of Colonialism* (solo exhibition by Moffat Takadiwa). National Gallery of Zimbabwe, Harare. Zimbabwe. 16 March - 12 June 2023.

Munnick, R.T.
Munnick, R.T. Group Exhibition. *Nando's Creative Exchange*. GFI Art Gallery, Gqeberha, South Africa. 7 December 2023 - 30 January 2024.

Munnick, R.T. Group Exhibition. *Spier Arts Trust Creative Block*. GFI Art Gallery, Gqeberha, South Africa. 7 December 2023 - 30 January 2024.

Ogunjimi, I.T.
Ogunjimi, I.T. Seminar Presentation. Public Art Forms as Image and Cultural Identity of Indigenous Towns in Oke-Ogun Region of Oyo State, Nigeria. *African Studies Centre Research Seminar*. Rhodes University, Grahamstown. South Africa. 7 November 2023.

Randall, T.T.
Randall, T.T. Solo Exhibition (MFA). *Twee Kante van 'n Storie*. Albany Road, Grahamstown. South Africa. 4 March 2023.

Thorburn, D.
Thorburn, D. Group Exhibition. *Paintings of The City*. Nelson Mandela Metropolitan Art Museum, Gqeberha. South Africa. 1 January - 25 May 2023.

Thorburn, D. Group Exhibition. *In the Eye Of The Beholder*. Albany Museum, Makhanda. South Africa. 22 June - 2 July 2023.

Tume, O.
Tume, O. Seminar Presentation. Wene-iwo (A play-reading). *African Studies Centre Research Seminar*. Rhodes University, Grahamstown. South Africa. 14 November 2023.

International Visits

De Jager, M.S.
De Jager, M.S. Kingston University, London, United Kingdom. Invited participant in *Kingston School of Art Doctoral Research Week*. 6 - 10 March 2023.

De Jager, M.S. Utrecht University, Utrecht, Netherlands. Expert participant in *Supervising Artistic and Practice-based Research*. 21 - 25 August 2023.

Linders, R.C.T., Erasmus, J.J. and Heymans, S.
Linders, R.C.T., Erasmus, J.J. and Heymans, S. Kingston University, London, United Kingdom. Invited participants in *Kingston School of Art Doctoral Research Week*. 6 - 10 March 2023.

Simbao, R.
Simbao, R. Africa Institute in Sharjah, United Arab Emirates. in collaboration with Salah Hassan (Africa Institute, Sharjah) and Ugochukwu-Smooth Nzewi (Museum of Modern Art (MoMA)) for the book on African Modernism as part of the MoMA book series, *Primary Documents*. 10 - 15 March 2023.

Simbao, R. The TAZARA (Tanzania-Zambia Railway Authority), Dar es Salaam, Tanzania and Mpika, Zambia. Research and filming for the documentary film, *Tulelosha (We are mourning)*. 1 June - 31 June 2023.

Simbao, R. The Museum of St. Helena and the St. Helena Government Archives on St. Helena Island in the South Atlantic Ocean, St. Helena Island, British Overseas Territory. Research project: *Buried Histories of St. Helena Island: British Possession, Oceanic Convergence and Global Encounter with Africa and Asia, 1600s to 1900s*. 1 - 31 August 2023.

Peer Reviewed Non-Subsidy-Earning Journal Research Publications

De Kock (Becker), D.
De Kock (Becker), D. (2023) Faces and Phases: Zanele Muholi.

ArtThrob: 25 Years of Art Writing in South Africa. Edited by Keely Shinnars, 172-75. ArtThrob.

Muvhuti, B.
Muvhuti, B. (2023) Songezo Zantsi: inkumbulo - An artist reckoning with South Africa's peripheralized histories. *Daily Maverick*. Available at: <https://www.dailymaverick.co.za/article/2022-12-26-songezo-zantsi-inkumbulo-an-artists-personal-reckoning-with-south-africas-peripheralised-histories/>

Muvhuti, B. (2023) Foreground subaltern voices: Mapula Embroideries' 'Hands Become Voices for our Planet'. *ArtThrob*. Available at: <https://artthrob.co.za/2023/01/24/foreground-subaltern-voices-mapula-embroideries/>

Muvhuti, B. (2023) An ode to women's protests: Sepideh Mehraban's 'Give Me Liberty or Give Me Death'. *ArtThrob*. Available at: <https://artthrob.co.za/2023/03/21/an-ode-to-womens-protests-sepideh-mehrabans-give-me-liberty-or-give-me-death/>

Muvhuti, B. (2023) Zimbabwe-born artist asks: How did we end up here? *Daily Maverick*. Available at: <https://www.dailymaverick.co.za/article/2023-05-12-zimbabwean-born-artist-asks-how-did-we-end-up-here/>

Muvhuti, B. (2023) John Hlatywayo: remembering a great Zimbabwean artist who was woefully neglected by history. *The Conversation*. Available at <https://theconversation.com/john-hlatywayo-remembering-a-great-zimbabwean-artist-who-was-woefully-neglected-by-history-218457>

Muvhuti, B. (2023) Shepherd Ndudzo's celebrated sculptures tell an untold story of southern Africa, *The Conversation Africa*. <https://theconversation.com/shepherd-ndudzos-celebrated-sculptures-tell-an-untold-history-of-southern-african-art-215555>

Muvhuti, B. (2023) Luxolo Witvoet and Gerald Khumalo. Access and Liminality, *ASAI Print Access Workshop*. November/December 2023: <https://asai.co.za/publication/access-liminality-asai-print-access-workshop/>

Muvhuti, B. (2023) Wezile Harmans. When we travel. *WhatIfTheWorld Gallery*. <https://www.whatiftheworld.com/presentation/when-we-travel/>

Muvhuti, B. (2023) Ronald Muchatuta. *Chipepa/Documents (Papers)*. <https://ronaldmuchatuta.com/studio>

Zhang, L.
Zhang, L. (2023) Visual Dialectics: Blessing Ngobeni's 'Ntsumi Ya Vutomi', *ArtThrob*. Available at: <https://artthrob.co.za/2023/09/11/visual-dialectics-blessing-ngobenis-ntsumi-ya-vutomi/>

Zhang, L. (2023) Moffat Takadiwa's landmark exhibition uses found materials to comment on Zimbabwe's colonial hangover, *The Conversation Africa*. Available at: <https://theconversation.com/moffat-takadiwas-landmark-exhibition-uses-found-materials-to-comment-on-zimbabwes-colonial-hangover-203073>

Peer Reviewed Subsidy-Earning Journal Research Publications

Anguria, L.A.
Anguria, L.A. (2023) An Intersectional Reading of Senzeni Marasela's Work: Making Visible the Marginalised Lived Experiences of Black South African Women in States of Perpetual Waiting. *De Arte* 58 (2023). p.77-99.

Foláránmí, S.A.
Foláránmí, S.A. (2023) The language of beauty in African art. *Journal of Art Historiography*. 29 (1). p.1-9.

Foláránmí, S.A. (2023) A ó Para Wa Láyò, Olenle; A ó Para Wa Láyò, Olenle. *The Nigerian Field*. 88. p.77-87.

Simbao, R.
Simbao, R. (2023) From the dilemma of Chinese nation branding and soft power to the performativity of creative power: The TAZARA Memorial Park and artistic intervention in Zambia. *Journal of Contemporary Chinese Art*. 10 (3). p.267-295.

Tume, T.K.
Tume, T.K. (2023). Dance and its many Faces in the Nigerian Worldview. *Creative Artist: A Journal of Theatre and Media Studies*. 17 (1). p.33-48.

Research Papers Presented at Academic/Scientific Conferences (Non-peer-reviewed Proceedings)

De Jager, M.S.
De Jager, M.S. Keynote Address: The Art of History. *New Turns, Fresh Directions and Alternative Avenues (Biennial Conference of the Historical Association of South Africa)*. Eden Grove, Rhodes University, Makhanda. South Africa. June 2023.



Detail of Robyn Munnick's 'Water off day' - one of the artworks exhibited on the Nandos Creative Exchange.

Photo: Department of Fine Art.

De Jager, M.S. Writing (as) passage. *The Trajectory of a Baseball: PhD Alumni Event*. Kingston School of Art, London. United Kingdom. March 2023.

Folárànmí, S.A.

Folárànmí, S.A. Making Images: Intercultural Dialogues. *Conference & Exhibition*. Department of Fine Art, University of Education Ludwigsburg, Ludwigsburg. Germany. October 2023.

Folárànmí, S.A. The Socio-Cultural Integration of Architecture, Sculpture, and Painting in Nigeria. *The 6th Conference of the Sculptors Association of Nigeria*. Delta State University, Abraka. Nigeria. August 2023.

Folárànmí, S.A. Masquerading Art, Politics and Resistances in Nigeria. *111th College Art Association (CAA) Conference*. New York Midtown, New York. USA. February 2023.

Folárànmí, S.A. Keynote Address: Kí Agbàdò tó Dáyé, Kíní kan nì adíyè nje - Before the emergence of the corn, the chicken ate something. *The State of Indigenous Studies: Views from Africa, Latin America, and North America*. Department of Spanish, Italian, and Portuguese, University of Virginia. USA. January 2023.

Goniwe, T.

Goniwe, T. Keynote Address. *Ukulandela Umoya Visual Art Colloquium*. University of Fort Hare, Alice. South Africa, 10 August 2023.

Goniwe, T. Discussant. *Politics, Art and Nation, Actuvirtual Symposium*. Johannesburg Institute for Justice Studies, University Johannesburg. South Africa. 27 June 2023.

Jimoh, G.A.

Jimoh, G.A. Subverting the Canon: African Digital Arts and Postcolonial Constellation. *Refraction and Resistance: Writing African Art. A Clark Graduate Student Symposium*. Manton Research Center, Clark Art Institute, Massachusetts. USA. April 2023.

Linders, R.C.T.

Linders, R.C.T. Analogue to digital: exploring transnational memory/loss through the (re)presentation of familial intimacies within a visual creative practice. *Seventh Annual Conference of the Memory Studies Association, 'Communitites and Change'*. Newcastle University, Newcastle. United Kingdom. July 2023.

Makandula, S.

Makandula, S. Makhanda Ngoku! *Transforming Education for Sustainable Futures*. Legacy Conference. April 2023.

Simbao, R.

Simbao, R. Audacious Art Histories as Emancipatory Knowledge: Manifesto, Theory, Praxis. *Art Association of Australia and New Zealand*. Griffith University, Gold Coast, Queensland. Australia. December 2023.

Zhang, Z.L.F.

Zhang, Z.L.F. Art Transforms City: Independent Art Spaces in post-colonial Harare. *3rd Tsinghua Area Studies Forum*. Tsinghua University, Beijing. China. July 2023.

Zhang, Z.L.F. Revisiting the notion of 'contemporaneity' through Zimbabwean artist Tapfuma Gutsa's work. *LSA (Lagos Studies Association) Annual Conference*. Online. June 2023.

DEPARTMENT OF Geography



Dr Sheldon Strydom
Head of Department

Introduction

Geography is a diverse discipline and this is reflected in the research of the Department. Current activities include the wild and augmented honeybush industry; land and agrarian reform; human mobility; the social dynamics of small towns; spatial dynamics related to heritage conservation; the impacts of dams on societies and river systems; soil erosion and sediment transfer; wetlands and their importance to society and the natural environment; applications of Geographical Information Systems (GIS) and Remote Sensing; Antarctic Geomorphology, Biogeography, and Climatology; Applied Climatology and climate change.

Not only is our research academically diverse it is spatially extensive, with projects extended across South African and down to Antarctica, with a multitude of international collaborators. The Department is extremely proud of our training of Postgraduate students and exposing them to the international research community. All those involved in such interactions have shown that Rhodes University, and the Department of Geography, are conducting research that is internationally relevant and of an international standard.

Postgraduates / Graduations

Two (2) MSc students and one (1) PhD candidate completed their research and graduated in the 2023 graduation ceremonies.

Distinguished Visitors / International Visits

Professor Thembele Kepe, Head of Department of Geography, Toronto University, Canada, visited and contributed to our research into land issues in the Pondoland region of the Eastern Cape and locally in Makhanda.



Nicola Wilmot (former MSc) exploring an openwork block deposit at Gaikaskop,
Photo: Department of Geography.

Significant Research Aligned Events

Staff and students participated in several local and international conferences in 2023.

Dr Sinenhlanhla Memela is a member of the South African Committee of the International Geographical Union (IGU) Taskforce for Young and Early Career Geographers (YECG), and is also the Liaison Officer for the Society of South African Geographers (SSAG) Chapter of the IGU Students and Young Professionals group.

Dr Memela and **Philippa Irvine** were awarded the SSAG 30th Anniversary Award which funded their project titled: "Rose-tinted spectacles: Perspectives on garden festivals, place identity and political ecology in Raymond Mhlaba Local Municipality," which will result in a number of upcoming publications.

Dr Sinenhlanhla Memela and Philippa Irvine continued their research into land tenure practices, the sense of place, and "walkability" in the Makhandla area.

Laura Bannatyne is the current President of the Southern African Association of Geomorphologists (SAAG) and coordinated the Biennial Conference of the Association which was held in the Hogsback Mountains.

Gillian McGregor continued her extensive research into the honeybush industry, and has provided critical insight for policy

development, specifically the Honeybush Community of Practice (HCOP). Postgraduate studies in this area have focussed on the biological and social sustainability of the wild honeybush industry and has been extended to include cultivated species.

Professor Ian Meiklejohn was awarded Honorary Life Membership and made a Fellow of the Southern African Association of Geomorphologists at the SAAG Biennial Conference, held in Hogsback from 28 to 30 September 2023. Professor Meiklejohn also contributed, and lead, an excursion in the Hogsback Mountains as part of the 2023 SAAG Biennial Conference. Professor Meiklejohn's ongoing research on sub-Antarctic and Antarctic environments includes investigations into the island wake effects of the atmospheric boundary layer of the sub-Antarctic Marion and Prince Edward Islands; controls on ground temperatures in Western Droning Maude Land, Antarctica; remote Sensing of the Price Edward Islands and Western Droning Maude Land, Antarctica; and applications for teaching Remote Sensing and Geomorphology in South Africa.

Dr Sheldon Strydom joined the Department of Geography in July of 2023, and is contributing to the Department's research into applied climatology and climate change. Dr Strydom is currently investigating the fire pyrogeography and associated fire climatology of the Eastern Cape. Dr Strydom is also conducting research on the hydroclimate of mountain regions in the Eastern Cape and other mountainous regions of South Africa.

Peer Reviewed Subsidy-Earning Journal Research Publications

Foster, I.D.L.

Boardman, J. and **Foster, I.D.L.** (2023) Are 'free-flowing rivers' a good idea? The challenge of removing barriers from our rivers. *Geography*. 108 (2023). p.121-129.

Boardman, J., Evans, B., Favis-Mortlock, D., **Foster, I.D.L.** and Vandaele, K. (2023) Progress in soil erosion research: A European perspective. *Journal of Soil and Water Conservation*. 78 (3). p.1-11.

Mighall, T.M., Pittam, N.J., **Foster, I.D.L.**, Ledger, P.M., Jordan, J., Martinez Cortizas, A. and Bateman, M. (2023) The Midlands of England: Economic Backwater or an Agricultural Powerhouse? Environmental Evidence from Prehistory to Modern Times Recorded in Sediments from Aqualate Mere, Central England, UK. *Environmental Archaeology*. 2023 (2023). p.1-27.

Kepe, T.

de Villiers, D. and **Kepe, T.** (2023) Missed opportunities in resolving people-conservation tensions in Dwesa-Cwebe, South Africa. *Koedoe: African Protected Area Conservation & Science*. 65 (1). p.1-5.

Ibrahim, A.S., Abubakari, M. and **Kepe, T.** (2023) Land as Common Property: The Fit of Land Governance with Ostrom's Design Principles. *Society*. 2023 (2023). p.1-15.

Lemahieu, A.

Rivers, N., Strand, M., Fernandes, M.A., Metuge, D., **Lemahieu, A.**, Nonyane, C.L., Benkeinstein, A. and Snow, B. (2023) Pathways to integrate indigenous and local knowledge in ocean governance processes: Lessons from the Algoa Bay project, South Africa. *Frontiers in Marine Science*. 1 (1). p.1-15.

Manona, S.S. and Kepe, T.

Manona, S.S. and **Kepe, T.** (2023) The High Court Ruling Against Ingonyama Trust: Implications for South Africa's Land Governance Policy. *African Studies*. 82 (2). p.181-199.

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Lee, K.-B., **McGregor, G.** and Coetze, A. (2023) Correlates of yield, fecundity and survival of a wild harvested *Cyclopia intermedia* (honeybush) population. *Agroecology and Sustainable Food Systems*. 47 (5). p.646-667.

**Meiklejohn, K.I.**

Sandham, L. (Ed.), Hansen, C. and **Meiklejohn, K.I.** (Co Eds). 2022. Proceedings. *Joint Biennial Conference of the Society of South African Geographers and the Southern African Association of Geomorphologists: 6 - 8 September 2021*. Rhodes University. ISBN 9780639710525 (electronic).

Grundling, R., Hansen, C. le Roux, J. and **Meiklejohn, K.I.** 2023. Scree, soils, and seeps. Geomorphological processes in the Amathole Mountains. *Excursion Guide for the SAAG 2023 Biennial Conference, Amathole Mountains, South Africa*. [Online]: https://66c8e2d1-5fbb-4db0-8bef-aadf7ef5d59b.filesusr.com/ugd/046a80_528850329b80448f9a1bec9aec88c389.pdf

Memela, S.

Memela, S. (2023) Lefebvrian analysis of livestock keeping in Fingo Village, Makhanda (Grahamstown), South Africa. *GeoJournal*. 88 (2023). p.5383-5395.

Nel, E.L.

Alam, A., **Nel, E.L.**, Hill, D. and Bulloch, H. (2023) Settling in New Zealand's small Towns: Experiences of Minority Ethnic Immigrants. *Journal of International Migration and Integration*. 24 (6). p.1079-1101.

Alam, A. and **Nel, E.L.** (2023) Migration, emerging multiculturalism and planning in rural and small town Aotearoa New Zealand. *Australian Planner*. 58 (3-4). p.132-142.

Strydom, S.

Matimolane, S., **Strydom, S.**, Mathivha, F.I. and Chikoore, H. (2023) Determinants of rainwater harvesting practices in rural communities of Limpopo Province, South Africa. *Water Science*. 37 (2023). p.267-289.

Van Der Waal, B.W. and Rowntree, K.

Anderson, R.J., le Roux, J., **Van Der Waal, B.W.**, **Rowntree, K.** and Hedding, D.W. (2023) Assessing the short-term inter-annual growth of the largest documented gully network in South Africa using UAV and SfM methodology. *Physical Geography*. 44 (2023). p.1-24.

Van Der Waal, B.W., Huchzermeyer, N.H. and Schlegel, P.K.

Van Der Waal, B.W., Grenfell, S.E., **Huchzermeyer, N.H.** and **Schlegel, P.K.** (2023) Selecting and refining suitable methods of developing digital elevation models to represent geomorphic features and characteristics of smaller wetlands in data-scarce environments. *Wetlands Ecology and Management*. 31 (4). p.539-550.



Above: Tafadzwa Makhuzha (MSc) collecting data on wild honeybush species in the Baviaanskloof region of the Eastern Cape.

Left: Laura Bannatyne inspecting slope deposits in the Hogsback Mountains.

Photos: Department of Geography.

DEPARTMENT OF Geology



Professor Stephen Prevec
Head of Department

Introduction

The Department of Geology in 2023 consisted of three (3) full time academic staff members and one (1) part-time nGAP lecturer, four (4) Research Associates, and two (2) vacant posts. In spite of these staffing challenges, the Department published eighteen (18) subsidy-earning research articles, eighteen (18) conference abstracts (three (3) of them peer-reviewed), and numerous (11) other publications. This represents a significant increase in research productivity from 2022 (as anticipated), and the departmental staff continued to maintain a high profile in terms of national and international participation in geoscience activities, looking optimistically to the future.

Postgraduates / Graduations

The Geology Department graduated one (1) MSc student, four (4) Honours students, and ten (10) BSc students in 2023. Several MSc students submitted their theses for review at the end of 2023, and we expect to confirm their graduations next year.

Distinguished Visitors / International Visits

Dr Robert Gess hosted a number of international research collaborators in 2023. These included Professor Kate Trinajstić (Curtin University, School of Molecular and Life Sciences, Australia), regarding their (and PhD candidate Ryan Nel's) ongoing research on placoderm fish; Dr Brian Choo (Flinders University, Australia) for collaboration on Devonian actinopterygian fish; Dr Carole Burrow (Queensland Museum, Australia) for collaboration on acanthodian fish, and Dr Chris Berry (Cardiff University, Wales) for collaboration on Devonian palaeobotany. Dr Gess also accepted the invitation, as a member of the European Research Council-funded, Uppsala University-hosted 'Tracking our ancestors across the Devonian world' project, to visit the University of Riga (Latvia) and to study their collections related to his research, as well as to participate in July 2023



Field trip participants on the St Davids intrusion, southwestern Wales, preceding the Wager & Brown Layered Intrusion workshop and the 14th International Platinum Symposium. Professor Stephen Prevec is in the foreground speaking to the group. St George's Channel in background. Photo: Department of Geology.

in an excavation of the Pavari 2 (Ketleri Formation) tetrapod bearing site in Latvia.

In April 2023, **Dr Roger Scoon** presented educational workshops for the Kenya Professional Safari Guides Association (KPSGA), at the Educational Centre of the Nairobi National Park, Nairobi, and the Ol Pejeta Conservancy, Nanyuki. The workshops were based on his 2022 book "Geological Highlights of East Africa's National Parks" published by Struik Nature.

Significant Research-Aligned Events

In January 2023 the entire academic staff of the department, and most of its active Postgraduate students, participated (as presenters, convenors, and session chairs) in the national meeting of the Geological Society of South Africa (the first such meeting since 2019), hosted at the University of Stellenbosch. **Professor Steffen Büttner** was nominated and elected as the next (2nd ever) President of the Igneous and Metamorphic Studies Group, a national research-oriented organisation associated with an annual national research conference founded in 2008.

Professor Stephen Prevec continued to serve as coeditor of the international research journal *The Canadian Journal of Mineralogy & Petrology* (CJMP), to edit and produce the quarterly magazine of the Mineralogical Society of South Africa, and contributed regularly to the international magazine of the Geochemical Society, *Elements*, on behalf of the Mineralogical Association of Canada. **Dr Nicola McLoughlin** continued her Associate Editorial services on behalf of the international journal *Lithosphere*. Professor Prevec was a member of the organising committee for the 14th International Platinum Symposium, held

in Cardiff (U.K.) in July 2023. A special issue of the CJMP later in 2023 published the abstracts from this conference and the associated workshop on layered intrusions that preceded it, and two thematic issues of research articles in two international journals are anticipated in 2024 as outcomes from this conference. Professor Prevec was also invited (and agreed) to serve on the organising committee of the Geological Society's "100 years of the Merensky Reef" commemorative conference to be held in 2024, honouring the discovery of the world's richest platinum metal deposits in South Africa in 1924.

In October, Professor Prevec presented his inaugural address to the university, entitled "Negotiating the paradigm shifts of the Earth Sciences: igneous rocks, ore deposits and impact cratering OR My four decades of geological pursuit: are we there yet?", in recognition of his promotion to full Professor in late 2022.

New research initiatives and collaborations

Dr Eugene Grosch was awarded an NRF 'Support for Rated Researchers Grant' in 2023 which will run for a three (3) year period and focuses on research in the Barberton greenstone belt. New PhD projects were initiated in 2023 by Professor Büttner on pegmatite-hosted gemstones in Kenya (with PhD candidate Ms Nancy Muriungi) and by Professor Prevec on critical mineral potential and ore petrogenesis in the Phalaborwa intrusion, South Africa (with **Ms Nosibulelo Zilibokwe**, a Rhodes MSc Exploration Geology graduate), in collaboration with **Professor Napoleon Hammond** (a Rhodes PhD graduate) at the University of Limpopo.

Non Peer Reviewed Publications

Prevec, S.A.

Prevec, S.A. (2023) Minsa quarterly magazine (The Geode). In: *Wager & Brown Layered Intrusion Workshop and the 14th International Platinum Symposium*. 3rd Ed. Johannesburg, South Africa. Mineralogical Society of South Africa.

Prevec, S.A. (2023) Minsa quarterly newsletter (The Geode). In: *Mineral classification schemes: An introduction to mineral phylogenetics*. 2nd Ed. Johannesburg, South Africa. Mineralogical Society of South Africa.

Prevec, S.A. (2023) Minsa quarterly magazine (The Geode). In: *AI and the geosciences*. 2nd Ed. Johannesburg, South Africa. Mineralogical Society of South Africa.

Prevec, S.A. (2023) Minsa quarterly magazine (the Geode). In: *June crossword: glass*. 2nd Ed. Johannesburg, South Africa. Mineralogical Society of South Africa.

Prevec, S.A. (2023) Mineralogical Society of South Africa quarterly magazine (The Geode). In: *Editorials (4 per annum)*. Johannesburg, South Africa. Mineralogical Society of South Africa.

Prevec, S.A. (2023) Minsa quarterly magazine (The Geode). In: Prevec, S.A. (ed.). *Gem and mineral societies in southern Africa*. 4th Ed. Johannesburg, South Africa. Mineralogical Society of South Africa.

Prevec, S.A. (2023) Minsa quarterly magazine (The Geode). In: *AI and the geosciences*. Johannesburg, South Africa. Mineralogical Society of South Africa.

Prevec, S.A. (2023) Minsa quarterly magazine (The Geode). In: *December crossword: Southern African gemstones*. 4th Ed. Johannesburg, South Africa. Mineralogical Society of South Africa.

Prevec, S.A. (2023) Minsa quarterly magazine (The Geode). In: *September crossword: critical minerals*. 3rd Ed. Johannesburg, South Africa. Mineralogical Society of South Africa.

Prevec, S.A. (2023) Minsa quarterly magazine (The Geode). In: *March crossword: Obsolete mineral names*. Johannesburg, South Africa. Mineralogical Society of South Africa.

Prevec, S.A. (2023) Minsa quarterly magazine (The Geode). In: *Publish, perish & poverty: the professional journal game*. Johannesburg, South Africa. Mineralogical Society of South Africa.

Peer Reviewed Subsidy-Earning Journal Research Publications

Buttner, S.H., Van Huyssteen, A. and Marima, E.

Buttner, S.H., Van Huyssteen, A., Marima, E., du Plessis, A., Tshibalanganda, M., Schmidt, C. and Howarth, G.H. (2023) The capturing and decompression of melt inclusions in olivine and ilmenite megacrysts from the Monastery kimberlite, South Africa. *Gondwana Research*. 115 (2023). p.81-97.

Chakraborty, T., Buttner, S.H., Costin, G. and Kankuzi, C.F.
Chakraborty, T., Buttner, S.H., Costin, G. and Kankuzi, C.F. (2023) The petrogenesis of highly fractionated gem-bearing pegmatites of Malawi: evidence from mica and tourmaline chemistry and finite step trace element modelling. *Mineralium Deposita*. 59 (2024). p.837-857.

Ryan Nel (PhD candidate) and Dr Rob Gess (supervisor) excavating mid-Devonian fossil placoderms in the Klein Karoo, Western Cape Province. Photo: Department of Geology.





The Geology Honours class of 2023, plus Postgraduates, visit the world's oldest and largest meteorite impact structure, in the northern Free State, South Africa. It made a hole 10 km deep and 300 km wide, just over 2 billion years ago. If a meteorite falls and there is nobody there to hear it, does it make a sound? Photo: Department of Geology.

Gess, R.

Gess, R. and Ahlberg, P.E. (2023) A high latitude Gondwanan species of the late Devonian *tristichopterid* *Hynieria* (Osteichthyes: Sarcopterygii). *PLoS ONE*. 18 (2). p.1-21.

Grosch, E.G.

Grosch, E.G. and Wilson, B. (2023) The discovery and petrogenetic significance of komatiites. *Journal of African Earth Sciences*. 205 (2023). p.1-11.

Marsh, J.S.

Howarth, G.H., Marsh, J.S., Duncan, A.R., Harris, C., Heinonen, J.S., Richardson, S.H., le Roex, A.P., Carlson, R.W. and Zartman, R.E. (2023) Petrogenesis of the Tuli Basin high-Ti picrites and basalts, Karoo CFB, Southern Africa: Classification, stratigraphy, emplacement, and mantle-source heterogeneity. *Lithos*. 440-441 (1). p.1-19.

Mavuso, S.S.

Ranhorn, K.L., Mavuso, S.S., Colarossi, D., Dogandzic, T., O'Brien, K., Ribordy, M., Ssebuyungu, C., Warren, S., Harris, J.W.K., Braun, D.R. and Ndiema, E. (2023) By the lakeshore: Multi-scalar geoarchaeology in the Turkana Basin at GaJ17, Koobi Fora (Kenya). *Quaternary Science Reviews*. 317 (2023). p.1-11.

McCloughlin, N.

McCloughlin, N., Li, M., Wacey, D., Martin, L.A.J., Shen, Y. and Beukes, N.J. (2023) Microbial sulphur-cycling and atmospheric signatures in the 2.52 Ga Gamohaan Formation, South Africa. *Earth and Planetary Science Letters*. 602 (1). p.117941.

Mhlanga, X.R.

Mhlanga, X.R., Tsikos, H., Lee, B., Rouxel, O.J., Boyce, A., Harris, C. and Lyons, T.W. (2023) The Palaeoproterozoic Hotazel BIF-Mn Formation as an archive of Earth's earliest oxygenation. *Earth-Science Reviews*. 240 (2023). p.1-11.

Moore, A.E.

Mapeo, R.B.M., Key, R., Moore, A.E., Mulder, J.A., Gardiner, N.J. and Robb, L.J. (2023) Syn-Bushveld "granite sheets" associated with the Molopo Farms Complex intruding into Transvaal Supergroup strata in southern Botswana. *South African Journal of Geology*. 126 (2). p.161-176.

Moore, A.E., Blenkinsop, T., Key, R., Maier, W.D. and Mapeo, R.B.M. (2023) Tectonic controls on the Great Dyke and the Bushveld Complex. *The Canadian Journal of Mineralogy and Petrology*. 61 (6). p.1429-1430.

Moore, A.E. and Helmstaedt, H. (2023) Origin of framesite revisited: Possible implications for the formation of CLIPPIR diamonds. *Earth-Science Reviews*. 241 (2023). p.1-11.

Prevec, S.A.

Barnes, S.-J., Maier, W.D., Mansur, E.T. and Prevec, S.A. (2023) What can the composition of chromite tell us? *The Canadian Journal of Mineralogy and Petrology*. 61 (6). p.1201-1203.

Prevec, S.A. and Largatzis, S.A.

Prevec, S.A., Largatzis, S.A., Salge, T. and Brownscombe, W. (2023) Evidence of localized hydromagmatic control on PGE distribution in the Merensky Reef, Bushveld Complex, South Africa. *The Canadian Journal of Mineralogy and Petrology*. 61 (6). p.1459-1461.

Prevec, S.A., Letete, K.P., Molyneux, D.P., Nchee, M.E. and Ntantiso, M.

Prevec, S.A., Letete, K.P., Molyneux, D.P., Nchee, M.E. and Ntantiso, M. (2023) Evidence for temporal shifts in basaltic magma compositions in the Karoo dolerites. *The Canadian Journal of Mineralogy and Petrology*. 61 (6). p.1568-1569.

Reddy, C.P. and Gess, R.

Reddy, C.P., Thuy, B., Reid, M. and Gess, R. (2023) Earliest known ophiuroids from high palaeolatitude, southern Gondwana, recovered from the Pragian to earliest Emsian Bavianskloof Formation (Table Mountain Group, Cape Supergroup) South Africa. *PLoS ONE*. 18 (10). p.1-17.

Scoon, R.N.

Mitchell, A.A. and Scoon, R.N. (2023) The Tennis Ball Marker in the South-Eastern Bushveld Complex: Comparison with the boulder bed of the Western Bushveld Complex and proposed genesis by Disaggregation of intrusive sills in processes akin to those involved in the formation of peperites and mafic enclave swarms. *South African Journal of Geology*. 126 (4). p.407-424.

Scoon, R.N. and Mitchell, A.A. (2023) Petrogenesis of the Marginal Sill phase and lower zone in the Eastern Limb of the Bushveld Complex: Incremental development of igneous layering and syn-magmatic emplacement of peridotite intrusions and sills. *South African Journal of Geology*. 126 (4). p.425-450.

Spaggiari, R.I.

Spaggiari, R.I. and Bordy, E.M. (2023) Anatomy of a diamondiferous gravel barrier spit at the palaeo-Orange River mouth, South-western Namibia. *Sedimentology*. 70 (5). p.1630-1654.

Peer-reviewed Proceedings

Prevec, S.A.

Barnes, S.-J., Mansur, E.T., Maier, W.D. and Prevec, S.A. Minor and trace element concentrations in chromite from layered intrusions: Implications for the formation of massive chromite layers. *GAC-MAC-SGA Annual National Meeting*. Laurentian University, Sudbury. Canada. May 2023.

Prevec, S.A. and Buttner, S.H.

Prevec, S.A., Buttner, S.H. and Pollney, D. Injection of melt sheet into impact crater footwall: implications from offset dykes of the Sudbury Igneous Complex, Canada. *GAC-MAC-SGA Annual National Meeting*. Laurentian University, Sudbury. Canada. May 2023.

Prevec, S.A., De Bruyn, J.A., Nxesi, B.F. and Johnstone, S.D.

Prevec, S.A., De Bruyn, J.A., Nxesi, B.F. and Johnstone, S.D. Shocked and juvenile zircons in impact crater footwall, Sudbury, Canada: partial melting of a reactivated footwall mylonite zone. *GAC-MAC-SGA Annual National Meeting*. Laurentian University, Sudbury. Canada. May 2023.

Research Papers Presented at Academic/Scientific Conferences (Non-peer-reviewed Proceedings)

Buttner, S.H., Marima, E. and Qobolo, N.C.

Buttner, S.H., Howarth, G.H., Marima, E. and Qobolo, N.C. Crystallization and segregation of carbonated silicate melt in kimberlitic melt inclusions from the Monastery kimberlite. *2023 Geocongress*. Stellenbosch University, Stellenbosch. South Africa. January 2023.

Dyan, S. and Prevec, S.A.

Dyan, S. and Prevec, S.A. Assimilation of siliceous and carbonaceous xenoliths in the Upper Critical Zone of the northern limb, Bushveld Complex: Implication for hybridization reactions. *GSSA Geocongress 2023*. University of Stellenbosch, Stellenbosch. South Africa. January 2023.

Gess, R.

Nel, R., Trinajstić, K.M. and Gess, R. Placoderm diversity in the high palaeolatitude Waterloo Farm Lagerstätte. *Palaeo Down Under 3*. WA Museum, Perth. Australia. July 2023.

Choo, B. and Gess, R. Dawn of African ray-fins. A new actinopterygian fish from the Upper Devonian Waterloo Farm Lagerstätte, South Africa. *18th Conference on Australasian Vertebrate Evolution, Palaeontology and Systematics (CAVEPS)*. Melbourne Museum, Melbourne. Australia. November 2023.

Harris, C., Gess, R., Penn-Clarke, C.R. and Jinnah, Z. Zoophycos in the Witpoort Formation (Witteberg Group, Cape Supergroup, South Africa). *GSSA Geocongress 2023*. University of Stellenbosch, Stellenbosch. South Africa. January 2023.

Gess, R. Dawn of African ray-fins. A new actinopterygian fish from the Upper Devonian Waterloo Farm Lagerstätte, South Africa. *Abstract volume of 18th Conference on Australasian Vertebrate Evolution,*

Palaeontology and Systematics (CAVEPS). Melbourne, Melbourne. Australia. November 2023.

During, M., Clayes, P., Goderis, P., Gess, R. and Ahlberg, P.E. Unique Preservation and REE enrichment of Famennian fossils from the Waterloo Farm Deposit, South Africa. *83rd Annual Meeting of the Society of Vertebrate Paleontology*. Duke Energy Convention Center, Cincinnati. U.S.A. October 2023.

Grosch, E.G.

Grosch, E.G. and Gardiner, N.J. Putting the Paleoproterozoic Noisy Formation on the Map. *GSSA Geocongress 2023*. Stellenbosch University, Stellenbosch. South Africa. January 2023.

Boughey, C. and Grosch, E.G. Affirming Student Identities. *International Higher Education Conference: Developing Faculty Members' Pedagogical Acuity*. University of Crete, Rethymnon. Greece. September 2023.

Johnstone, S.D. and Prevec, S.A.

Johnstone, S.D., Van Niekerk, D. and Prevec, S.A. Petrography, geochemistry, and remote sensing of an anomalous Karoo diorite. *GSSA Geocongress 2023*. University of Stellenbosch, Stellenbosch. South Africa. January 2023.

McLoughlin, N.

McLoughlin, N., Li, M., Wacey, D., Shen, Y. and Beukes, N.J. Late Archean microbial ecosystems of the 2.52 Ga Gamohaan Formation: new insights from drill core AHL-4. *GSSA Geocongress 2023*. Stellenbosch University, Stellenbosch. South Africa. January 2023.

Prevec, S.A. and Dyan, S.

Chaumba, J., Prevec, S.A., Dyan, S. and Musa, C. Magma contamination by country rocks during formation of the Northern Lobe of the Bushveld Complex, South Africa: evidence from chromite chemistry. *Geological Society of America (GSA) Connects 2023*. David L. Lawrence Convention Center, Pittsburgh, Pennsylvania. U.S.A. October 2023.

Chaumba, J., Prevec, S.A. and Dyan, S. Constraints on parent magma composition of the mineralized Deep Flatreef at Turfspruit, Northern Lobe of the Bushveld Complex, based on silicate mineral compositions. *Geological Society of America (GSA) Connects 2023*. David L. Lawrence Convention Center, Pittsburgh, Pennsylvania. U.S.A. October 2023.

Prevec, S.A. and Largatzis, S.A.

Prevec, S.A., Largatzis, S.A., Salge, T. and Brownscombe, W. Evidence of localized hydromagmatic control on PGE distribution in the Merensky Reef, Bushveld Complex, South Africa. *GSSA Geocongress 2023*. University of Stellenbosch, Stellenbosch. South Africa. January 2023.

Prevec, S.A., Letete, K.P., Molyneux, D.P., Nchee, M.E. and Ntantiso, M. Evidence for temporal shifts in basaltic magma compositions in the Karoo dolerites, and the implications for the role of cumulus processes. *GSSA Geocongress 2023*. University of Stellenbosch, Stellenbosch. South Africa. January 2023.

Dr Roger Scoon at Ol Pejeta Conservancy nature preserve, Kenya, in 2023. Photo: Department of Geology.



DEPARTMENT OF History



Dr Janeke Thumbran
Head of Department

Introduction

The History Department continues to produce research in a range of areas, including biography, the history of the Communist Party of South Africa/ South African Communist Party, environmental history, visual and sound history, race and DNA testing, the history of universities in South Africa, mining history and creative history. In addition, members of the Department continue to participate in international and national conferences and workshops.

Postgraduates / Graduations

The Department graduated two (2) Honours students, one (1) with distinction and an MA with distinction.

Significant Research Aligned Events

Dr Janeke Thumbran participated in the international workshop, "That's History? - Thirty Years after the end of Apartheid" at Princeton University in February 2023. **Dr Tapiwa Madimu** (virtually) presented his paper, "Negotiating 'survival': Unregulated diamond mining in the Northern Cape Province, South Africa" at the African Studies Association 66th Annual Meeting, San Francisco, on 2 December 2023.

The Department hosted the Biennial Conference of the Historical Association of South Africa (HASA) from 27 to 29 June 2023. This took the form of an international conference entitled "History: New Turns, Fresh Directions and Alternative Avenues". Presenters - who included both established academics and Postgraduate students - came from Southern Africa, Switzerland, the UK, the USA and the Netherlands. There were three (3) parallel sessions each day falling under the broad themes of Apartheid Studies, Archival Studies and History, Colonial Studies, Contemporary South African Studies, Environmental History, Heritage Studies, History Teaching, Identity and Queer History, Liberation Studies, Medical History, Sport History, Tourism History and Zimbabwean Studies. There were also sessions



Members of the Department of History at the Southern African Historical Association (SAHS) conference in June 2023.
Photo: Department of History.

on Film and Historical Video Games where several presenters showed and spoke about their own short films. All members of the Rhodes History Department presented papers. The keynote address entitled “The Art of History” was given by the well-known historian **Emeritus Professor Bill Nasson** and **Associate Professor Maureen de Jager**, Deputy Dean of Humanities and Head of the Department of Fine Art at Rhodes. Professor de Jager also curated an exhibition entitled “History

(TBC): Refocusing the South African War” which was housed in Cory Library for the duration of the conference. Numerous participants commented on the quality of the papers presented, how welcome they were made to feel at the conference and at Rhodes University, and how much hard work had clearly gone into organising and running the event.

History

Books/Chapters/Monographs

Thumbran, J.D.

Thumbran, J.D. (2023) Black academics matter: history and anti-blackness at South African universities. In: Simpson, T. (ed.). *History beyond apartheid: New approaches in South African historiography*. UK: Manchester University Press. p.55-75. ISBN: 9781526159076.

Peer Reviewed Subsidy-Earning Journal Research Publications

Baines, G.F.

Baines, G.F. (2023) Propagating Afrikaner nationalism: The Voortrekker stamps as icons of an ideology, c.1933-1949. *Nations and Nationalism*. 29 (3). p.1024-1040.

Catsam, D.

Catsam, D. (2023) Introduction to Safundi special issue: anti-Apartheid movements on campus. *Safundi*. 23 (1-2). p.5-10.

Catsam, D. (2023) Welcome to Wrexham (2022). Co-Produced by Boardwalk Pictures, DN2 Productions, Maximum Effort, RCG Productions, 3 Arts Entertainments, and FXP. Distributed by FX. Eighteen episodes. *Journal of sport history*. 50 (1). p.110-114.

Kirkaldy, A.

Kirkaldy, A. (2023) Between worlds: German missionaries and the transition from mission to Bantu education in South Africa. *New Contree*. 89 (2023). p.122-126.

Thumbran, J.D. and Gillam, K.E.

Thumbran, J.D. and Gillam, K.E. (2023) "Until the people govern": the Black students' movement at Rhodes University in the 1980s. *Safundi*. 23 (1-2). p.11-18.

Wells, J.C.

Wells, J.C. (2023) Trading Places, Making Friends, The 1820s Trade Fairs in The Eastern Cape Reconsidered. *Bulletin of the National Library of South Africa*. 77 (2). p.1-20.

Book Reviews

Kirkaldy, A.

Kirkaldy, A. "Apartheid's Stalingrad by Rory Riordan: a book review", online publication, Litnet, 2023-05-10. <https://www.litnet.co.za/apartheids-stalingrad-by-rory-riordan-a-book-review/>

Kirkaldy, A. The Party of the Century - Red Road to Freedom: A History of the South African Communist Party, 1921-2021. By Tom Lodge. Auckland Park: Jacana, 2021, and Suffolk: James Currey, 2022. In: *The Journal of African History*. Volume 64, Issue 2, July 2023, pp. 320-324.

Thumbran, J.D.

Thumbran, J.D. (2023) Naomi Roux. Remaking the Urban: Heritage and Transformation in Nelson Mandela Bay. *American Historical Review*. 127 (4). p.2044-2045.

Research Papers Presented at Academic/Scientific Conferences (Non-peer-reviewed Proceedings)

Kirkaldy, A.

Kirkaldy, A. "Something New, Something Old: Accounts of Vhuloi, U Via Vhatu and Witch-Hunting In Nineteenth and Twentieth Century Vendlant". Paper presented to the biennial conference of the Historical Association of South Africa, 27-29 June 2023.



Photo: Chris Marais.

DEPARTMENT OF Human Kinetics and Ergonomics (HKE)



Dr Swantje Wells
Head of Department

Introduction

The Department has had a very successful year in the research sphere with a number of publications which include student co-authors and national and international collaborators.

Postgraduates / Graduations

During the fall and spring graduation, ten (10) students graduated with a Master of Science degree in Human Kinetics and Ergonomics, and eight (8) students graduated with an Honours degree.

Distinguished Visitors / International Visits

In 2023, the Department represented Rhodes University in several international events.

Professor Candice Christie was the invited keynote speaker at the Women in Sport Congress in Cape Town. She also took two (2) of her Postgraduate students, **Liam Agnee** and **Ryan McCarthy**, to the World Congress of Science and Medicine in Cricket in Chandigarh, India, where she discussed *Bridging the Gap: Navigating Challenges and Empowering Women in Cricket* as an invited panellist.

Andrew Todd participated in the World Patient Safety 2023 Global Conference 'Engaging Patients for Patient Safety', 12 - 13 September 2023, in Geneva, Switzerland, during which the WHO global patient safety charter was drafted, and which has subsequently been released.

Dr Jonathan Davy attended the 14th Organisational Design and Management (ODAM) conference in July 2023 in Bordeaux, France. The theme of the meeting was 'Societal transitions and transformation of work: intervening in organisations and on the work of managers.' At the meeting, Dr Davy presented some of his research findings on fatigue management in the South African aviation sector, which had relevance to the meeting, considering that it is often managers who need to make decisions on how to manage fatigue in pilots and cabin crew, usually



Sino data collection.

Photo: HKE

done so without insight into what challenges crew face. The research is part of a larger project to gather local data to inform high-level discussions with the regulator, unions and operators about changing the law around flight and duty periods in South Africa.

Dr Swantje Wells was invited to participate in the Steppingstone Panel for Global AutoUI at the ACM AutomotiveUI conference in Ingolstadt, Germany. The goal of the panel was to obtain a better understanding of what are the main barriers for researchers from different parts of the world, especially from the Global South.

Mike Lambert joined the Department as an Honorary Professor.

Significant Research Aligned Events

In 2023, a consortium of researchers from Rhodes University, the University of Cape Town, the University of the Witwatersrand and Coventry University in the United Kingdom applied for and were awarded the Wellcome Trust Mental Health Award: Integrating Sleep and Circadian Science into our Understanding and Treatment of Anxiety, depression and Psychosis (<https://wellcome.org/grant-funding/people-and-projects/grants-awarded/clock-ticking-longitudinal-multi-site-study>).

This award will enable this group to explore the interaction between sleep and circadian changes in adolescents and mental health while controlling for various contextual factors. While the relationship between changes in sleep and mental health in adolescents has been well established, the mechanisms behind this remain poorly understood.

Dr Jonathan Davy is the lead researcher at Rhodes University in collaboration with Dr Swantje Wells, and data collection will commence in February 2025. The project's total value is R58 million, with Rhodes receiving roughly R9 million. A central pillar of this research project is the involvement of members of the local Makhanda community (at the Rhodes site) who have experienced mental health and sleep problems in adolescence, either on their own or through the work they perform in the community. This board of lived experience experts has been convened and will now advise the researchers on all aspects of the project.

Human Kinetics and Ergonomics (HKE)

Peer Reviewed Subsidy-Earning Journal Research Publications

Campbell, B.C., Davy, J.P., Pote, L. and Christie, C.J.

Campbell, B.C., Davy, J.P., Pote, L. and Christie, C.J. (2023). The effect of time of day on adolescent fast bowling performance: a pilot study. *International Journal of Sports Science and Coaching*. 18 (2): 584-593.

Christie, C.J.

Pote, L., Nicholls, S., King, G. and Christie, C.J. (2023) Anthropometric and morphological characteristics of elite male cricket bowlers and batters over time: A systematic review. *International Journal of Sports Science and Coaching*. 18 (5). p.1882-1892.

Christie, C.J., Mcewan, K. and Munro, C.E.

Christie, C.J., Mcewan, K., Munro, C.E., King, G.A., le Roux, A., Olivier, B., Jackson, B., Manjra, S., MacMillan, C. and Pote, L. (2023) Do South African international cricket pace bowlers have similar bowling volume and injury risk associates compared to other elite fast bowlers? *International Journal of Sports Science and Coaching*. (2023). p.1-8.

Christie, C.J., Nellemann, S.A. and Davy, J.

Christie, C.J., Nellemann, S.A., Davies, T., Fourie, J.L. and Davy, J. (2023) Sunglass tint does not impact the indoor catching performance of cricket fielders. *Frontiers in Sports and Active Living*. 5 (2023). p.1-12.

Davy, J. and Todd, A.

Davy, J., Todd, A., Metson, G.S. and Thatcher, A. (2023) Designing a greywater treatment system in a highly adaptive urban environment: an ergonomics and human factors observational analysis. *Urban Water Journal*. 20 (5). p.624-637.

Mcewan, K. and Christie, C.J.

Mcewan, K., Pote, L., Nicholls, S., Radloff, S.J. and Christie, C.J. (2023) The role of selected pre-match covariates on the outcome of One-day International (ODI) cricket matches. *South African Journal of Sports Medicine*. 35 (1). p.1-6.

Research Papers Presented at Academic/Scientific Conferences (Non-peer-reviewed Proceedings)

Christie, C.J.

Attanyake, D., Karnick, N., Gupta, I., Christie, C.J. and Olivier, B. (2023). Bridging the Gap: Navigating challenges and empowering women in cricket. Invited panel discussion. *World Congress of Science and Medicine in Cricket*. 3 - 5 November 2023, India.

Christie, C.J. (2023). Workloads and injury risk in female cricketers. Women in Sport Congress. Newlands, Cape Town - Invited keynote speaker.

Agnew, L.J., Macmillan, C., Barnard, D., and Christie, C.J. (2023). Preseason Bowling-related Exercise Volume and Injury Incidence Among Adolescent Cricket Pace Bowlers in Makhanda, South Africa. Proceedings of the World Congress of Science and Medicine in Cricket, 3 - 5 November 2023, India (Selected Abstracts). *Journal of Postgraduate Medicine, Education and Research* (2023). 10.5005/jp-journals-10028-1645

McCarthy, R., Todd, A.I., Goodenough, L., and Christie, C.J. (2023). Observational Study of Cricket Batting Mechanics. Proceedings of the World Congress of Science and Medicine in Cricket, 3 - 5 November 2023, India (Selected Abstracts). *Journal of Postgraduate Medicine, Education and Research* (2023). 10.5005/jp-journals-10028-1645.

King, G., Petersen, C., Christie, C. and Walter, S. (2023). Strength requirements to enhance bowling speed: a Delphi consensus investigation. *World Congress of Science and Medicine in Cricket*. 3 - 5 November 2023, India.



Dane Masters 1.

Photo: HKE.

King, G., Petersen, C., Christie, C. and Walter, S. (2023). Bowling Speed, Strength & Kinematic Relationships in Pace Bowlers - A pilot study. *World Congress of Science and Medicine in Cricket*. 3 - 5 November 2023, India.

Christie, C.J. and Pote, L.

Christie, C.J., Pote, L. and Sholto-Douglas, R. (2023). Variables Associated with Run-out Opportunities in Cricket: Coaches' Perceptions vs Video Analyses of the Indian Premier League 2018/2019 Seasons. Proceedings of the World Congress of Science and Medicine in Cricket, November 3-5, 2023, India (Selected Abstracts). *Journal of Postgraduate Medicine, Education and Research* (2023). 10.5005/jp-journals-10028-1645.

Davy, J.P.

Davy, J.P., Blair, D. and Wells, S. (2023). Understanding the prevalence of, and contributing factors to aircrew fatigue within the South African aviation industry to inform amendments to Flight and Duty regulations. *14th Organizational Design and Management Conference*. 11 - 13 July 2023, Bordeaux, France.

Todd, A., de Bruyn, E., Skeyi, S., McCarthy, R. and Davy, J. (2023). Learning how to use human factors and ergonomics participatory approaches to embed service-learning to support community athlete development. *Rhodes University Community Engagement Conference*. Rhodes University, Makhanda.

Todd, A.I., de Bruyn, E., Skeyi, S., McCarthy, R. and Davy, J.P. (2023). Learning how to use human factors and ergonomics participatory approaches to embed service-learning to support community athlete development. *Rhodes University Community Engagement Conference*. Rhodes University, Makhanda.

DEPARTMENT OF Ichthyology and Fisheries Science



Professor Cliff Jones
Head of Department

Introduction

The Department of Ichthyology and Fisheries Science's (DIFS) focus is on the study of fish, fisheries, aquaculture and the sustainable utilisation of aquatic resources in general, primarily through research and research-related teaching and training of students in these fields. It is recognised by the African Union as a *Centre of Excellence for Training in Marine Fisheries and Aquaculture*, with an emphasis on biodiversity, oceanography and ecosystems studies.

Our staff of seven (7) academics continued the Department's international reputation through collaborative teaching and research relationships with about thirty (30) universities and research institutions around the world. In addition to the South African Institute of Aquatic Biodiversity (SAIAB), our Postgraduate supervision and research network also included collaborations with, and by way of example: the South African Environmental Observation Network (SAEON), Department of Forestry, Fisheries and Environment (DFFE), North West Provincial Government, Water Research Commission (WRC), Oceanographic Research Institute (ORI), Makerere University (Uganda), Bahir Dar University (Ethiopia), University of Namibia, Eldoret University (Kenya), Maynooth University (Ireland), University of Ghent (Belgium), Centre for Environment, Fisheries and Aquaculture Science (UK), University of Fort Hare, University of Johannesburg, University of Pretoria, Stellenbosch University, Nelson Mandela University and researchers from numerous fish-farming industry partners.

Postgraduates / Graduations

Five (5) Postdoctoral Fellows, twenty-nine (29) PhD candidates, fourteen (14) MSc and five (5) Honours students were registered in the DIFS in 2023; and we graduated eleven (11) PhD candidates, eight (8) MSc and nine (9) Honours students in 2023. A school of 50-60 registered Postgraduates was made possible primarily due to a well-developed network of



collaborative partners and our close working relationship with our associate title holders.

Distinguished Visitors / International Visits

The DIFS hosted various staff members from institutions in Malawi, Kenya and Uganda as part of the COTRA program. Various staff of the DIFS hosted and/or visited research collaborators in Belgium, Brazil, Spain, Egypt, France, Germany, Iceland, England, Ireland and Sweden.

As part of the DIFS role as an African Union Centre of Excellence, **Professor Peter Britz** was appointed to the African Union Advisory Council for the Policy Framework and Reform Strategy for Fisheries and Aquaculture.

The DIFS hosted a delegation from Liberia, including the Honorable Augustine Manoballah, the Deputy Director General of the Liberian National Fisheries and Aquaculture Authority (NaFAA) and various other Directors from that country's Departments of Fisheries Policy & Planning and Marine Fisheries and Environment. The President of the University of Liberia, Professor Dr Julius S. Nelson Jr., and **Professor Mabizela** signed an MoU committing both institutions to a collaborative research future.

Our Department also entered into similar agreements with the Ministry of Marine Resources in Eritrea, that will see the DIFS hosting sixteen (16) Postgraduate degrees for staff from that government department over the course of the next few years.

Professor Wilbert Kadye was a Visiting Fellow in the Department of Biology, University of Oxford, UK, hosted by Professor Michelle Jackson. This visit was the inception of a collaborative fish biometrics research programme, which was supported by funding from the DHET-FPP programme.

Professor Amber Childs presented at the International Conference on Fish Telemetry in France and met with several of her international collaborators, including Dr Audrey Darnaude (Marbec, University of Montpellier, France) and Dr David Kaplan (IRD). As a managing member of Dr Darnaude's EU COST Action CA19107, Unifying Approaches to Marine Connectivity for improved Resource Management for the Seas (SEA-UNICORN), her research was also presented at the FSBI conference in Essex, UK.

Significant Research Aligned Events

The year 2023 marked the final year of the *AquaVitae project*, an European Commission funded initiative. Professor Cliff Jones and Professor Peter Britz continued their collaboration with their collaborative research partners from Europe, South and North America, with a focus on innovation in low trophic aquaculture. Their work integrated seaweed and sea cucumber culture into existing abalone aquaculture, and the inclusion of by-products in abalone feeds, with an emphasis on waste recycling and the development of sustainable, circular economies. Numerous aspects of Professor Jones and Professor Britz's research and innovation in the *AquaVitae project* were

commercialised during this final year of the project. Professor Britz also continued his research and innovation in developing ranching technologies and he continued his focus on developing aquaculture and fisheries policy in Africa. Professor Jones continued his research partnership with South African Breweries and TaylorMade Water Solutions where the focus is integrating effluent treatment, fish and crop production.

This year also saw the end of the COTRA project, that aimed to improve tertiary education in aquaculture and fisheries science across Africa, funded by the European Commission/African Union's *Inter-Africa Academic Mobility Scheme* with various research collaborations with partners in Ethiopia, Kenya, Uganda, the Democratic Republic of Congo and Malawi. **Professor Cliff Jones** and **Professor Horst Kaiser** saw various PhD and MSc programmes on this project come to an end in 2023. Some manuscripts from this research have been submitted for peer-review, while several others are ready for submission.

Professor Sauer completed the analysis from a project on the exploitation of small tuna in the Western Indian Ocean, in collaboration with research colleagues from Kenya, Mozambique and Tanzania. A suite of research papers has been submitted for publication, and an MSc student and PhD candidate have completed their studies and will graduate in October 2024. A research project on transboundary fisheries management in Zambia was completed and a PhD thesis submitted with two

(2) manuscripts published. Work on the international One Ocean Hub project continued, and an analysis on global sustainability projects, and one on policies governing Marine Areas Beyond National Jurisdictions completed and published. Research on value chains in the octopus fishery in the Seychelles was completed and a manuscript is being prepared for publication in 2024. In collaboration with Professor Britz, work continued on a number of projects under the African Union, as part of the activities of the DIFS as an African Union Centre of Excellence.

Professor Wilbert Kadye continued his research on freshwater ecosystems by focusing on the ecology of headwater streams, biological invasions and conservation of fishes in the Eastern Cape. He also continued with research on general fish taxonomy in collaboration with **Professor Albert Chakona** (SAIAB). Wilbert is also part of two large Foundational Biodiversity Information Program (FBIP) research projects. These are the Waterberg Biodiversity Research project (Limpopo Province) in collaboration with the University of Witwatersrand, University of Pretoria and University of Mpumalanga, and the REFRESH project in collaboration with SAIAB, SANBI, North West University, Stellenbosch University and University of Cape Town.

Professor Warren Potts completed a multinational and institutional African Coelacanth Ecosystem Project (with Professor Amber Childs as co-lead) which expanded on research to understand the consequences of fisheries-induced evolution for the adaptability of fishes to the impacts of climate change. He continued research on an NRF Marine and Coastal Research project examining the potential of developing recreational catch-and-release zones to improve the sustainability of the marine

MSc student, Franck Lutli harvesting Swiss chard produced in a catfish aquaponics system.
Photo: William Selapa.



Our staff of seven (7) academics continued the Department's international reputation through collaborative teaching and research relationships with about thirty universities and research institutions around the world.

shore-based fishery, also with Professor Childs as the PI. He, along with Professor Childs and Dr Matthew Farthing were awarded a multi-institutional collaborative African Coelacanth Ecosystem Project (with Professor Childs as PI) that aims to develop a conservation strategy for South Africa's *Argyrosomus* species. Professor Potts also continued with his One Ocean Hub research on South Africa's recreational fisheries governance. This included the completion of a national survey of the South African marine shore-based fishery, an evaluation of the efficacy of the recreational angling license system and a collaboration with the University of Namibia that aims to conduct a socio-ecological evaluation of the marine shore-based fishery of Namibia.

Professor Potts collaborated internationally on several recreational fisheries projects including a global project that examined the importance of inland recreational fisheries for food and a project looking at different harvest strategies used in marine recreational fisheries around the world. He continued a Wild Trust funded research project which aimed to gather spatio-temporal abundance data on coastal shark species and improve shark angler catch and release behaviour. He initiated a global recreational catch and release mortality review funded by CEFAS, UK and in partnership with Thuenen Institute, Germany, University of Carleton, Canada, and University of Berlin, Germany with Dr Alexander Winkler and Dr Matthew Farthing as lead researchers, and a global review on methods for estimating and understanding the drivers of non-compliance in recreational fisheries. This project is funded and in partnership with CEFAS, UK, with Dr Christopher Bova as the lead researcher. He led the SAFER Lab community engagement project with the Rock and Surf Super Pro League, which has extended into its eleventh year. Highlights of the project in 2023 included our (SAFER Lab and DIFS Honours class) presence in the National competition, where we collected angler catch and release behaviour and fish health and survival information. The co-developed national data collection database is now ten (10) years old and represents the largest spatio-temporal fish diversity, demographics and relative abundance monitoring dataset in the country. Our efforts with this angling group have now expanded to other competitive angling groups. A Professional Development Postdoctoral Fellow, Dr Natanah Gusha, has now been tasked with developing spatio-temporal assessments of the dominant species captured in the marine shore-based fishery. Professor Potts also continued leading the development and scientific project of the AQUALAB, a collaboration in the development of aquatic research facilities with the SAIAB and hosted by the DIFS.

Professor Horst Kaiser continued his collaboration with the marine research facility at DFFE and the University of Montpellier in France on the development of diets for dusky kob, as well the study of fish parasites (skin flukes) with DFFE as the collaborating facility. Additional collaboration has been established with the University of Johannesburg with the objective of sequencing the whole genome of the critically endangered estuarine pipefish, *Syngnathus watermeyerii*.

Professor Childs continued her research on coastal fisheries ecology within Professor Potts' Southern African Fisheries Ecology Research (SAFER) Lab. This included leading a NRF Marine and Coastal Research project (Project CAREZone) addressing knowledge gaps in our marine-shore based fishery using a socio-ecological approach (ecosystem, human dimension and governance) for improved conservation and management of our shore-based line fishery and continuing with an NRF grant assessing the link between linefish physiology and behaviour. She was also awarded a new NRF ACEP grant (Project SAFEZone) assessing key conservation actions outlined in the newly established *Argyrosomus* spp conservation strategy. She also continued her international collaborations on marine fish connectivity within the COST Action SEA-UNICORN project with Dr Darnuade, Dr Anna Sturrock (University of Essex, UK) and Dr Susanne Tanner (University of Lisbon, Portugal). She also continued her research with several other research programmes, in which she is a collaborator. This included another NRF Marine and Coastal Research grant project (PI: Professor Nikki James, SAIAB) on shallow water seascapes assessing fish nursery habitats and connectivity among coastal habitats, a NRF Thuthuku grant (PI: Dr Taryn Murray (SAIAB) assessing movement ecology of Mugilidae species, a Save our Seas eagle ray movement connectivity project (PI: Michelle Soekoe), and a SANParks blue ray movement ecology project (PI: Kyle Smith). Within each of these larger programmes, Professor Childs is also currently working with University of Pretoria, Nelson Mandela University, University of Montpellier and the IRD in France.

Ichthyology and Fisheries Science (DFIS)

Peer Reviewed Non-Subsidy-Earning Journal Research Publications

Van Der Walt, K.A.

Porri, F., Mcconnachie, B., Van Der Walt, K.A., Wynberg, R. and Patrick, P. (2023) Eco-creative nature-based solutions to transform urban coastlines, local coastal communities and enhance biodiversity through the lens of scientific and Indigenous knowledge. *Cambridge Prisms: Coastal Futures*. 1 (17). p.1-14.

Peer Reviewed Subsidy-Earning Journal Research Publications

Allison, C

Allison, C., Winkler, A.C., Childs, A-R., Muller, C. and Potts, W.M. (2023) Can social media platforms be used to foster improved environmental behaviour in recreational fisheries? *Fisheries Research*. 258: 106544.

Arkhipkin, A.I.

Kuepfer, K., Votier, S.C., Sherley, R.B., Ventura, F., Matias, R., Anderson, O., Brickle, P., Arkhipkin, A.I. and Catry, P. (2023) Prey-switching to fishery discards does not compensate for poor natural foraging conditions in breeding albatross. *ICES Journal of Marine Science*. 80 (9). p.2414-2426.

Jones, J.B., Bustamante, P., Guillou, G. and Arkhipkin, A.I. (2023) Using stable isotope chronologies within squid gladii (*Doryteuthis gahi*) to evaluate dietary differences by fishing region and season. *Marine Ecology Progress Series*. 703 (1). p.95-108.

Piontek, R., Jaspers, C., Boersma, M. and Arkhipkin, A.I. (2023) Temporal and spatial variability in the mesozooplankton community off the Falkland Islands (Southwest Atlantic). *Regional Studies in Marine Science*. 66 (1). p.1-12.

Buring, T., Jones, J.B., Pierce, G.J., Rocha, F., Bustamante, P., Brault-Favrou, M. and Arkhipkin, A.I. (2023) Trophic ecology of the squid *Doryteuthis gahi* in the Southwest Atlantic inferred from stable isotope analysis. *Estuarine, Coastal and Shelf Science*. 284 (1). p.1-13.

Kuepfer, A., Catry, P., Bearhop, S., Sherley, R.B., Bell, O., Newton, J., Brickle, P., Arkhipkin, A.I. and Votier, S.C. (2023) Inter-colony and inter-annual variation in discard use by albatross chicks revealed using isotopes and regurgitates. *Marine Biology*. 170 (46). p.1-16.

Winter, A. and Arkhipkin, A.I. (2023) Opportunistic Survey Analyses reveal a recent decline of Skate (Rajiformes) Biomass in Falkland Island Waters. *Fishes*. 8 (1). p.1-11.

Arkhipkin, A.I., Skeljo, F., Wallace, J., Derbyshire, C., Goyot, L., Trevizan, T. and Winter, A. (2023) Industry-collaborative mesh trials to reduce bycatch in the Falkland Islands skate trawl fishery (Southwest Atlantic). *ICES Journal of Marine Science*. 80 (3). p.1-13.

Buring, T., Schroeder, P., Jones, J.B., Pierce, G.J., Rocha, F. and Arkhipkin, A.I. (2023) Size-related, seasonal and interdecadal changes in the diet of the Patagonian longfin squid *Doryteuthis gahi* in the South-western Atlantic. *Journal of the Marine Biological Association of the United Kingdom*. 101 (8). p.1111-1128.

van der Grient, J., Morley, S., Arkhipkin, A.I., Bates, J., Baylis, A., Brewin, P., Harte, M., White, J.W. and Brickle, P. (2023) The Falkland Islands marine ecosystem: A review of the seasonal dynamics and trophic interactions across the food web. *Advances in Marine Biology*. 94 (2023). p.1-68.

Arkhipkin, A.I. and Shaw, P.W.

Chemshirova, I., Arkhipkin, A.I., Shaw, P.W. and McKeown, N.J. (2023) Integrated statolith and genomic analysis reveals high connectivity in the nektonic squid *Illex argentinus*: implications for management of an international cephalopod fishery. *ICES Journal of Marine Science*. 80 (7). p.1976-1990.

Britz, P.J.

litembu, J.A., Fitzgerald, D., Altintzoglou, T., Boudry, P., Britz, P.J., Byron, C.J., Delago, D., Girard, S., Hannon, C., Kafensztok, M., Lagreze, F. and *et al.* (2023) Comparative Description and Analysis of Oyster Aquaculture in Selected Atlantic Regions: Production, Market Dynamics, and Consumption Patterns. *Fishes*. 8 (2023). p.1-19.

Island based subsistence fishers. Photo: Warwick Sauer.



- Childs, A.R.**
Murray, T.S., Elston, C., Bennett, R.H., Childs, A.R. and Cowley, P.D. (2023) Movement patterns and underestimation of the maximum age of a Vulnerable endemic guitarfish species inferred from mark-recapture studies. *African Journal of Marine Science*. 45 (2). p.149-154.
- Childs, A.R. and Hempel, C.D.**
Welch, R.J., Childs, A.R., Hempel, C.D. and James, N.C. (2023) Juvenile sparids (*Rhabdosargus holubi*) consistently select structurally dense vegetated habitat in nursery seascapes. *Journal of Fish Biology*. 2023 (2023). p.1-11.
- Cochrane, K.L.**
 Lombard, A.T., Clifford-Holmes, J.K., Goodall, V., Snow, B., Truter, H., Vrancken, P., Jones, P.J.S., **Cochrane, K.L.** and *et al.* (2023) Principles for transformative ocean governance. *Nature Sustainability*. 2023 (2023). p.1-16.
- Dixon, R.B.**
 Mann, B.Q., Daly, R., **Dixon, R.B., Filmlalter, J.D., Murray, T.S., Cowley, P.D., Kyle, R., Chater, S. and Mann-lang, J.B.** (2023) The fate and movements of aquarium-released giant trevally *Caranx ignobilis* inferred from acoustic telemetry. *Zoo Biology*. 42 (2023). p.625-631.
- Dixon, R.B., Murray, T.S. and Cowley, P.D.**
Dixon, R.B., Murray, T.S., Mann, B.Q., Cowley, P.D. and Jordaan, G.L. (2023) Movement patterns of the iconic giant trevally *Caranx ignobilis* from southern Africa, determined using tag-recapture data. *Fisheries Research*. 263 (2023). p.1-11.
- Duncan, M.I.**
Duncan, M.I., Fiorenza, M., Thomas H, B., Andres, M.J., Hailey, D., Curtis A, D. and Erik, A.S. (2023) Oxygen availability and body mass modulate ectotherm responses to ocean warming. *Nature Communications*. 14 (2024). p.1-12.
- Foster, R.M.**
Foster, R.M., Childs, A-R., Mann, B.Q. and Potts, W.M. (2023) Specialist spearfishers' ecological knowledge provides accurate information that improves the description of the reproduction of a data-deficient species, *Oplegnathus conwayi* in South Africa. *Fisheries Research*. 257.
- Gennari, E.**
 Bowlby, H.D., Hammerschlag, N., Irion, D.T. and **Gennari, E.** (2023) How continuing mortality affects recovery potential for prohibited sharks: The case of white sharks in South Africa. *Frontiers in Conservation Science*. 3 (1). p.1-14.
- Scacco, U., **Gennari, E.**, Crescenzo, S. and Fanelli, E. (2023) Looking into the prevalence of bycatch juveniles of critically endangered elasmobranchs: A case study from pelagic longline and trammel net fisheries of the Asinara Gulf (Western Mediterranean). *Frontiers in Marine Science*. 10 (1). p.1-13.
- Williams, L., Lucrezi, S., **Cowley, P.D. and Gennari, E.** (2023) Stakeholders' perceptions of the conservation and management of elasmobranchs in South Africa. *Marine Policy*. 157 (2023). p.1-11.
- Faure-Beaulieu, N., Lombard, A.T., Olbers, J., Goodall, V., Da Silva, C., **Daly, R., Kock, A.A., Murray, T., Gennari, E., Bernard, A.T.F., Cowley, P.D., Elston, C. and et al.** (2023) A systematic conservation plan identifying critical areas for improved chondrichthyan protection in South Africa. *Biological Conservation*. 284 (2023). p.1-11.
- Gennari, E., Leslie, R.W., Parkinson, M.C. and Watson, R.G.A.**
 van Staden, M., Ebert, D.A., **Gennari, E., Leslie, R.W., McCord, M.E., Parkinson, M.C., Watson, R.G.A., Wintner, S., da Silva, C. and Bester-van der Merwe, A.E.** (2023) Molecular Taxonomy of South Africa's Catsharks: How Far Have We Come? *Diversity*. 15 (7). p.1-11.
- Gotz, A.E.**
 Pérez-Valera, F., Pérez-López, A., **Gotz, A.E.**, Ros-Franch, S., Márquez-Aliaga, A., Baeza-Carratalá, J.F. and Pérez-Valera, J.A. (2023) First record of Anisian deposits in the Betic External Zone of southern Spain and its paleogeographical implications. *Sedimentary Geology*. 449 (2023). p.1-11.
- Imbwae, I. and Sauer, W.H.H.**
Imbwae, I., Aswani, S. and Sauer, W.H.H. (2023) Socio-Economic and Environmental Challenges of small-scale Fisheries: Prognosis for Sustainable Fisheries Management in Lake Kariba, Zambia. *Sustainability*. 15 (4). p.1-19.
- Imbwae, I., Aswani, S., Sauer, W.H.H. and Clinton, H.** (2023) Trans-boundary Fisheries Management in Kavango-Zambezi Transfrontier Conservation Area (KAZA-TFCA): Prospects and Dilemmas. *Sustainability*. 15 (5). p.1-11.
- Khosa, D. and Mofu, L.**
Khosa, D., South, J., Matam, N., Mofu, L., Wasserman, R.J. and Weyl, O.L.F. (2023) The past and current distribution of native and non-native fish in the Kowie River catchment, Makhandla, Eastern Cape. *Knowledge and Management of Aquatic Ecosystems*. 129 (424). p.1-11.
- Lipinski, M.R.**
 Forde, S., Von Der Heyden, S., Le Moan, A., Nielsen, E.S., Durholtz, D., Kainge, P., Kathena, J., **Lipinski, M.R.**, Ndjaula, H.O.N., Matthee, C.A. and Henriques, R. (2023) Management and conservation implications of cryptic population substructure for two commercially exploited fishes (*Merluccius* spp.) in southern Africa. *Molecular Ecology*. 2023 (2023). p.1-17.
- Mofu, L.**
Mofu, L., Dalu, T., Wasserman, R.J., Woodford, D.J. and Weyl, O.L.F. (2023) Trophic ecology of co-occurring fishes in the Sundays River Valley irrigation ponds, assessed using stable isotope and gut content analyses. *Journal of Fish Biology*. 2023 (2023). p.1-11.
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DEPARTMENT OF Information Systems



Associate Professor Greg Foster
Head of Department

Introduction

The Department of Information Systems' research focus areas include AI Technology, Business Analytics, Business Process Management, eGovernment, eLearning, Health Information Systems, ICT for Development, ICT for Education, IT Governance, Information Security, Project Management, and User Experience. Staff undertake research in their respective fields independently or collaboratively with Research Associates and colleagues from other institutions in South Africa and internationally.

Postgraduates / Graduations

Postgraduate numbers in the Department include three (3) PhD candidates, eight (8) Masters students, and a class of twenty-nine (29) Honours students. We celebrated the graduation of two (2) Master of Commerce in Information Systems, with Distinctions, and two (2) PhDs in Information Systems in 2023.

Distinguished Visitors / International Visits

The Department welcomed a visit from Dr Orre and Mr Tibblin from Malmö University (Sweden) in November 2023 as part of a collaborative project to explore the possibility of establishing a virtual exchange programme between Malmö University, Rhodes University and the University of Fort Hare. The staff of the Department also enjoyed time abroad, with Ms Lehasa spending time in Japan as part of the Young Female Scientist Programme, organised by the United Nations Trade and Development (UNCTAD) in collaboration with Okayama University.

Significant Research Aligned Events

Associate Professor Greg Foster was part of the Rhodes University delegation that attended the SASUF Research and Innovation Week 2023 in Cape Town in March 2023. At this



Above: Odifentse Lehasa touring Okayama University Hospital in Japan with the Graduate School of Medicine, Dentistry and Pharmaceutical Sciences, exploring drug development and dispensing.



Left: Odifentse Lehasa and Thandie Nqowana from Rhodes University meet with the Okayama University (Japan) President, Professor Hirofumi Makino, and members of the UNCTAD office for a welcoming ceremony into the UNCTAD and Okayama University's Young Female Scientist Programme.

Photos: Department of Information Systems.

event, Associate Professor Greg Foster and collaborators from Malmö University (Sweden), University of Gothenburg (Sweden) and University of Fort Hare hosted a workshop on digital health information kiosk design.

Professor Siebörger remains active in an ongoing collaborative research project between Rhodes University, De Montfort University (England) and SAlAIDS (a SADC-based NGO working in the areas of accessing quality sexual reproductive healthcare (SRH) service, gender equality and social inclusion). This research focuses on developing a digital platform (MobiSAfAIDS)

to support youth and adolescents' engagement with government and healthcare workers regarding adequate and appropriate SRH service.

Dr Baduza, along with collaborators from the Department of Computer Science (Rhodes University), was the proud recipient of an EU Intra-Africa Academic Mobility Grant to support Masters and PhD research, while **Dr van der Schyff** was elected to serve on the program committee for the 22nd Annual Security Conference in Las Vegas, United States.

Information Systems

Books/Chapters/Monographs

Sieborger, I. and Pade-Khene, C.

Thinyane, M., Sieborger, I. and Pade-Khene, C. (2023) Technology-Mediated Transparency, Accountability, and Participation in the Realisation of Citizen-Centred Health Interventions: Case Study of MobiSAfAIDS in Southern Africa. In: Onyango, G. (ed.). *Public Policy and Technological Transformations in Africa*. Switzerland: Palgrave Macmillan. p.299-341. ISBN: 9783031187032.

Concerts, Exhibitions, Performances, Workshops, Events

Foster, G. and Boucher, D.E.

Orre, C.J., Foster, G., Boucher, D.E. and Lindroth, T. Workshop host. How do we design an engaging and culturally sensitive digital health promotion kiosk in resource-constrained environments? *Workshop SASUF Research & Innovation Week*. University of the Western Cape, Cape Town. South Africa. 29 - 31 March 2023.

Peer Reviewed Subsidy-Earning Journal Research Publications

Flowerday, S.

Frauenstein, E.D., Flowerday, S., Mishi, S. and Warkentin, M. (2023) Unraveling the behavioral influence of social media on phishing susceptibility: A Personality-Habit-Information Processing model. *Information and Management*. 60 (2023). p.1-28.

Matshaba, L. and Nxosi, M.

Matshaba, L., Nxosi, M. and Herselman, M. (2023) Guiding the Development of Interoperable Health Information Systems: A Conceptual IT Governance Framework. *Lecture Notes in Computer Science*. 13873 (2023). p.143-156.

Pade-Khene, C.

Pade-Khene, C. (2023) Manifestations of Trust in the Implementation of Civic Tech in Southern Africa. *IFIP Advances in Information and Communication Technology*. 696 (2023). p.225-240.

Renaud, K.

Ahmad, R., Terzis, S. and Renaud, K. (2023) Content Analysis of Persuasion Principles in Mobile Instant Message Phishing. *IFIP Advances in Information and Communication Technology*. 674 (2023). p.324-336.

N'guessan Yves-Roland, D., Renaud, K., Taenaka, Y. and Kadobayashi, Y. (2023) Smart home cybersecurity awareness and behavioural incentives. *Information and Computer Security*. 31 (5). p.545-575.



Lumka Salamntu presented a paper titled: *Exploring factors that affect Business Process Management adoption in South African State-Owned Enterprises* at the 2023 Conference on Information Communications Technology and Society (ICTAS) hosted by the Durban University of Technology, Durban, South Africa.

Photo: Department of Information Systems.

Prior, S. and Renaud, K. (2023) Who Is Best Placed to Support Cyber Responsibilized UK Parents? *Children*. 10 (7). p.1-11.

Kulyk, O., Renaud, K. and Costica, S. (2023) People want reassurance when making privacy-related decisions? Not technicalities. *Journal of Systems and Software*. 200 (2023). p.1-11.

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Renaud, K. and Van Der Schyff, K.

Renaud, K., Warkentin, M., Pogrebna, P. and Van Der Schyff, K. (2023) VISTA: An inclusive insider threat taxonomy with mitigation strategies. *Information and Management*. 61 (1). p.1-22.

Theunissen, K.E. and Sieborger, I.

Theunissen, K.E. and Sieborger, I. (2023) The Use of Tablet PCs in Previously Disadvantaged Secondary Schools in South Africa During the Covid-19 Pandemic. *Communications of the Association for Information Systems*. 52 (2023). p.638-656.

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Renaud, K., Van Der Schyff, K. and MacDonald, S. (2023) Would US citizens accept cybersecurity deresponsibilization? Perhaps not. *Computers and Security*. 131 (2023). p.1-12.

Van Der Schyff, K., Foster, G., Renaud, K. and Flowerday, S.

Van Der Schyff, K., Foster, G., Renaud, K. and Flowerday, S. (2023) Online Privacy Fatigue: A Scoping Review and Research Agenda. *Future Internet*. 15 (5). p.1-11.

Wright, G.

Denecke, K., Rivera Romero, O., Petersen, C., Benham-Hutchins, M., Cabrer, M., Davies, S., Wright, G. and et al. (2023) Defining and Scoping Participatory Health Informatics: An eDelphi Study. *Methods of Information in Medicine*. 62 (03/04). p.90-99.

Zhou, C., Pade-Khene, C. and Sieborger, I.

Zhou, C., Pade-Khene, C. and Sieborger, I. (2023) Privacy and Responsible Data in Civic Tech for Youth Sexual Reproductive Health Services. *IFIP Advances in Information and Communication Technology*. 696 (2023). p.218-224.

Peer-reviewed Proceedings

Diadla, S.N. and Ramafi, P.

Diadla, S.N. and Ramafi, P. Big Data Analytics Adoption in South African Banks: Opportunities and Challenges. *International Conference on Teaching, Assessment and Learning in the Digital Age*. Southern Sun Newlands, Cape Town. South Africa. December 2023.

Mokoena, M. and Baduza, G.

Mokoena, M. and Baduza, G. Developing a Process that enables the Integration of Automating Business Models along with the Participants within the Workforce. *2023 International Conference on Artificial Intelligence and its Applications*. Preskil, Mahebourg. Mauritius. November 2023.

Ramafi, P.

Ramafi, P., Motjopolane, I. and Gorejena, K. Ethical Framework for Multi-Source Big Data Analytics Disease Surveillance in Public Healthcare. *International Conference on Artificial Intelligence and its Applications*. Preskil Island Resort, Mahebourg, Mauritius. November 2023.

Ramafi, P. and Motjopolane, I. Examining big data sources for enhanced disease surveillance in public healthcare. *International Conference on Teaching, Assessment and Learning in the Digital Age*. Southern Sun Newlands, Cape Town. South Africa. December 2023.

Ramafi, P. and Baduza, G.

Ramafi, P., Baduza, G. and Penxa, L. Investigating the Use of Big Data Analytics Through Digital Transformation for Political Campaigns, South Africa. *Social Sciences International Research Conference*. The Capital Pearls, Umhlanga. South Africa. October 2023.

Salamntu, T.P.L.

Salamntu, T.P.L. and Makoza, F. Exploring factors that affect Business Process Management (BPM) adoption in South African State-Owned Enterprises. *2023 Conference on Information Communications Technology and Society (ICTAS)*. Coastlands Musgrave Hotel, Durban. South Africa. March 2023.

Tibatshi, B. and Ramafi, P.

Tibatshi, B. and Ramafi, P. Investigating the influence of big data analytics on the campaign outcomes of political parties, South Africa: A scoping review. *International Conference on Teaching, Assessment and Learning in the Digital Age*. Southern Sun Newlands, Cape Town. South Africa. December 2023.

SCHOOL OF Journalism and Media Studies



Dr Jeanne du Toit
Head of School

Introduction

In 2023, the School of Journalism and Media Studies (JMS) achieved a record-breaking amount of research and handled major and small-scale research initiatives and outcomes. Staff, Post-doctoral Fellows, and Postgraduate students in the School of Journalism and Media Studies have continued to conduct impactful research projects, as well as being invited to and participating in a variety of key research-related activities and events on a national, regional, and international scale. The School has also significantly attracted wide attention from national media, development and policy organisations; all of which contribute meaningfully to Rhodes University's 120th anniversary. There is a breath of fresh air in the School, inspiring and driving staff and students toward a research-intensive culture as part of the work we do.

Postgraduates / Graduations

The School of Journalism and Media Studies graduated thirty-four (34) Bachelor of Arts, fifty-two (52) Bachelor of Journalism, eight (8) Bachelor of Social Science, eight (8) Postgraduate Diploma in Journalism, ten (10) Postgraduate Diploma in Media Management (part-time), six (6) Honours, two (2) Bachelor of Social Science (Hons) and one (1) Postgraduate Diploma in Economics Journalism students in 2023.

Distinguished Visitors / International Visits

- **Dr Alette Schoon** spent a week in Cape Town as a guest of the Centre for Film and Media Studies, where she collaborated with Professor Marion Walton and Professor Tanja Bosch on joint research projects. The trip was focused on completing a TikTok study in South Africa with Professor Bosch and developing a new research project with Professor



Dr Chikezi E. Uzuegbunam
Deputy Head of School for Research



Dr Kealeboga Aiseng
Deputy Head of School for Projects

Walton to interview Humanities colleagues at UCT and Rhodes University about how the new reality of ubiquitous data and the systems built on it, including AI, is influencing their research and teaching. Dr Schoon was also invited to the University of Cape Town to participate in a writing retreat to conceptualise a new book on *Documentary Film in South Africa*, in November 2023.

- **Professor Jennifer Thomas** spent six (6) weeks as a distinguished guest of the School of Journalism and Media Studies, funded by Fulbright and Rhodes University, working closely with Ms Thandeka Gqubule-Mbeki, Mr Shepi Mati and Dr Alette Schoon. Professor Thomas collaborated with the school on a project involving the use of the School's TV studio and virtual linkups for the Doha Debates. Broadcast staff are currently in communication with the organisation that hosts Doha Debates around this proposal. Dr Schoon and Professor Thomas also worked on a short film exploring the historical links between South African Black intellectuals and African American institutions in the USA, such as Historically Black Colleges and the AME Church, through the stories of Charlotte Maxeke and others. During her visit, Professor Thomas presented talks on the Legacy and History of Black Historical Colleges and Universities in the USA and also hosted student seminars in JMS and the Politics Department on the challenges of doing journalism in racist societies entitled "Reporting while Black".
- **Dr Chikezie E. Uzuegbunam** was invited to a special meeting at Strathmore University, Kenya, organised by the Centre for Information Property and Information Technology Law, which brought together academics, researchers, tech creators, tech lawyers, and others for a three-day Artificial Intelligence in Africa symposium. The visit was made possible by a grant from the International Development Research Centre (IDRC) of Canada and the Swedish International Development Cooperation Agency.
- **Dr Taryn Isaacs De Vega** was awarded the UCONN Emerging Scholars Fellowship at the University of Connecticut, allowing her to participate in the full-time Emerging Scholars Programme for PhD candidates from South Africa. The fellowship provided growth opportunities and new perspectives on teaching and learning instruction. It also motivated her to consider her research trajectory and South African publishing plans.

Significant Research Aligned Accomplishments and Events

Dr Alette Schoon

Dr Alette Schoon was recently selected for a 16-week international mentorship Open Seeds project organised by Open Life Science, an organisation that assists people to become ambassadors for open science in their communities. The mentorship assisted with a project she is collaborating on with Dr Henri-Count Evans from the University of Eswatini around the development of a series of training videos or MOOCs.

The MOOC focuses on the development of Digital Humanities skills in computational and data methodologies for Media Studies researchers. The video production is jointly funded by the Andrew W. Mellon Foundation through the *Media & Social Belonging* grant awarded to Rhodes University, and CHERTL's Open Resources project, and emerged from the DigiMethods Africa Winter School organised by Alette in June 2023. This is the second time Alette has run a DigiMethods event. This year's DigiMethods was funded by the Mellon Foundation as part of a project in Digitality, Sociality and Media led by Professor Anthea Garman.

Professor Anthea Garman

Professor Anthea Garman was involved in producing the second edition of the *COVID-19 Country Report* alongside academics working on the chapter on government communications: Martina Della Togna (Rhodes University), Professor Stephanie Burton (University of Pretoria), Julian Jacobs (Rhodes University), Dr Leti Kleyn (University of Pretoria), and Dr Happy Sithole of the Council for Scientific and Industrial Research. The *COVID-19 Country Report* assessed the government's communication strategy in the second year of the pandemic. In the second year of the pandemic, attention was directed towards the vaccination campaign and the containment of the COVID-19 virus. The vaccination campaign was assessed as fairly successful in protecting the elderly and the most vulnerable from severe infection, yet fell short of global benchmarks in terms of communication and a lack of attention to the realities of everyday life. The vaccination campaign revealed a governance approach that was directive and hierarchical and not adequately embedded in local understanding and processes.

Professor Garman was also involved in UNESCO's Promotion of Excellence in Journalism Education in Africa Project. The project was co-ordinated by Wits University (Mr Alan Finlay from the Wits Journalism Centre) and Rhodes University (Professor Anthea Garman from the School of Journalism and Media Studies). The project aimed to improve journalism education in Africa by developing excellence criteria and awarding grants to ten (10) schools. Over a hundred (100) journalists from thirty-seven (37) countries participated in consultations. Ten (10) projects were selected for funding from the Google News Initiative. A report was presented at the International Festival of Journalism in 2023.

Dr Chikezie E. Uzuegbunam

Dr Chikezie E. Uzuegbunam was awarded a Carnegie Corporation of New York Fellowship (CCNY/ASA Fellow). The Fellowship included attending a series of scholarly meetings in the USA organised by the African Studies Association (ASA) from November 26 to December 5, 2023. The meetings took place in San Francisco, California, and culminated in the annual international conference of the ASA. Part of the fellowship includes membership in ASA for the next two (2) years. CCNY fully funded the fellowship. At the conference in California, Dr Uzuegbunam was also awarded the Esteemed Fellowship Recognition Award, along with nineteen (19) others.

Dr Uzuegbunam was also approached to serve as a country expert (South Africa) for the Digital Society Project, "Measuring Internet Politics," run by Brandeis University, North Dakota State University, University of Gothenburg and University of North Carolina. He was also invited by the National Information Technology Development Agency (NITDA) in Nigeria to serve as a member of the Volunteer Expert Group and co-lead (Education and Research) for the development of Nigeria's Artificial Intelligence Policy. This appointment was for four (4) months in 2023.

Dr Uzuegbunam received a Global Knowledge Exchange grant from the International Communication Association (ICA) to serve as a mentor to emerging scholars and attend the preconference organised as part of the ICA in Africa regional conference at the University of Cape Town in November 2023.

Dr Theodora Adjinn-Tettey

Dr Theodora Adjinn-Tettey, a Research Associate of the School of JMS, received a Global Knowledge Exchange grant for the ICA in Africa regional conference in November 2023, hosted at UCT. The purpose of the preconference was to promote positive knowledge sharing while preventing systemic disparities in higher education. It accomplished this by bringing together senior and emerging scholars from inside and outside of the African continent to have structured discussions about the most effective ways to research media and communication in Africa.

Election of members of JMS to the ExCo of SACOMM

The South African Communications Association (SACOMM) elected members of the School of Journalism and Media Studies (JMS) to its Executive leadership. Dr Alette Schoon was elected as Chair of the Communication Studies Stream, while Dr Chikezie E. Uzuegbunam was elected as Chair of the Communication Advocacy and Activism Stream. Dr Bimbo Fafowora and Dr Nonhlanhla Ndlovu were elected Strategic Communications and Emerging Scholars Chairs, respectively.

DigiMethods Africa Winter School

In June 2023, the School of JMS, for the second time, hosted a DigiMethods event with experts from around the world teaching hands-on digital, computational and data analysis skills to media researchers. The skills taught at this year's DigiMethods winter school by experts from the Universities of Utrecht, Sheffield and eSwatini, respectively, included topic analysis for news websites through coding in *R* and *Python* and using network and sentiment analysis to analyse Twitter posts for misinformation. Staff member, Dr Alette Schoon, who organised the event, is developing a series of resources based on these workshops to enable us to share our skills with others, which we can hopefully extend into a digital humanities initiative.

Taking place directly after the Winter School, the DigiMethods Colloquium ("Future-proofing journalism and media education

in the Global South", 23 - 24 June) brought together educators, researchers, and experts in the fields of digital media, ICT, data journalism, multimedia, AI, and information literacy. This two-day event saw panels and discussions on innovative teaching approaches and responses to some of the challenges that characterise our work in the digital age, and participants left having made powerful connections between different higher education institutions and countries.

Andrew W. Mellon Foundation-funded Project *Media & Social Belonging - Digitality, Sociality and Youth in Makana*

This Andrew W. Mellon Foundation-funded project seeks to investigate the materiality of digital devices, what they are capable of, and how they are connected within assemblages to networks of data and electricity, household environments, urban spaces and the bodies of their users, allowing us to understand the restraints and capabilities of usage of these devices with greater nuance and qualitative differentiation. This project is run by a five-person team under PI **Professor Anthea Garman: Dr Chikezie E. Uzuegbunam** (team leader), **Professor Priscilla Boshoff**, **Dr Alette Schoon**, and Postdoctoral Fellows, **Dr Nonhlanhla Ndlovu** and **Dr Bimbo Fafowora**.

The team recruited nineteen (19) young men and women aged 18-30 from the Awarinet project at Joza Youth Hub, a small, under-served community in Makhandla. The participants were recruited to serve as research participants and assistants using qualitative methods. The project was divided into two stages: a pilot study during the Digital Media Methods Winter School and data collection and training. The decolonial approach adopted by the team shifted from Eurocentric research methods to treating participants as collaborators and co-producers of knowledge. This approach empowers participants with skills and knowledge for future use in their communities.

The project utilised three (3) qualitative methods, namely, Mobile Diary, Photovoice, and Walkthrough, to assess mobile connectivity. Mobile Diary involved surveys, log sheets, and interviews, Photovoice used photographs and Focus Group Discussions, and Walkthrough involved walking through Joza township areas to map digital infrastructures. The data collected was analysed in a debriefing session.

Experiential learning project of Cue Media

The experiential learning project of JMS, Cue Media, employed thirty-four (34) students across the specialisations of multimedia, audio, photography, videography, writing and editing, as well as the Postgraduate diploma course and *Grocott's* interns. The project ran for eleven (11) days coinciding with the National Arts Festival (22 June to 2 July 2023). *Cue* staff were tasked with reporting on the festival and reviewing the curated and fringe programme shows. The total output of content amounted to one hundred and sixteen (116) articles in the daily PDF distributed on WhatsApp and Telegram, twenty-two (22) radio

shows on RMR and additional content distributed on social media platforms. The reach, impressions, and engagement averaged 3000, 8000, and 700, respectively. Students have gained valuable experience in their specialisations and have networked with some of the leading performers and artists in the country, as well as made valuable connections with media houses such as *Trace Studios* and *SAfm*.

Commissioning of new mural

A new mural commissioned by the School was unveiled on Friday, 21 July 2023, in an event that was well-attended by both university leadership and media organisations, marking the culmination of the School's 50th anniversary celebrations. **Dr Noxolo Grootboom**, who received an Honorary Doctorate from Rhodes University in 2021, was a special guest and opened the mural on behalf of the School. The mural depicts prominent historical South African media figures, many from the Eastern Cape. Painted in black and white, the eye-catching images cover two sides of the School's Africa Media Matrix Building. Pictured in the mural are John Tengo Jabavu, the editor of South Africa's first indigenous language newspaper, and Phyllis Ntantala-Jordan, a groundbreaking woman writer. Ernest Cole, the photographer whose famous book, *House of Bondage* helped to topple apartheid, appears next to exiled *Daily Dispatch* editor Donald Woods. The final historical figure is Noxolo Grootboom, the legendary SABC radio presenter.

Design of Rhodes University's 120th-anniversary logo

When the call went out from Professor Peter Clayton for Rhodes University staff to generate ideas for the university's 120th birthyear celebrations, Brian Garman of the School of JMS (senior design teacher) offered his own services and that of his fourth-year students to work with the Communication Division on an RU120 graphic design. Brian got the go-ahead from the RU120 team, who proposed that the image depicting the number 120 include the university's clocktower to represent the number 1 and the Cycle of Life sculpture to represent the number 0. The students sprang to work, creating a wide variety of exploratory designs. They focused on creating a logo which is positive and affirming, simple, memorable, stands out in a crowded visual space, and can be distinctly associated with Rhodes University. The final logo was launched in October 2023.

One Hundred Years of Radio in South Africa: A Symposium

The School of JMS held a symposium on October 16, 2023, to commemorate the 100th birth year of radio in South Africa. The event, facilitated by Shepi Mati and the Media Development and Diversity Agency (MDDA), was part of a weeklong series celebrating South Africa's media freedom. Keynote speakers included Advocate Robin Selwral, Professor Sisanda Nkoala, and Professor Gilbert Motsaathebe. Former Heads of Radio

Freedom and radio producers shared their experiences during apartheid. The symposium concluded with a screening of a documentary about black broadcasting pioneers.

MDDA funding for Rhodes Music Radio

Unathi Koboka, Station Head of Rhodes Music Radio, successfully secured R2,483,000.00 in funding for the station from the Media Development and Diversity Agency (MDDA). These funds will be used to refurbish the station's studios and also to finance stipends for staff. The MDDA visited the station at the start of 2022, and at that time commended RMR for the care and professionalism with which staff have continued to maintain its studio, despite the ageing status of its equipment. They will provide RMR with updated equipment that is appropriate for broadcasting in the digital era. They have signalled to RMR and to the School of JMS that they have high hopes for the role that we can play in developing innovative approaches to what community radio can achieve in bringing together the affordances of broadcast technology, digital resources, and multimedia culture.

From the Public Service Accountability Monitor (PSAM)

The PSAM hosted a roundtable discussion in Johannesburg on 30 August 2023, titled "Budgeting for Inclusive Governance:

The Role of Policy, Oversight and Activism." The event, covered by the *Mail & Guardian*, involved a diverse panel of speakers.

Zukiswa Kota, Programme Head at the PSAM in South Africa, has been appointed to the Steering Committee of the Open Government Partnership (OGP) for a three-year term. The OGP, established in 2011, aims to promote transparent, participatory, inclusive, and accountable governance. Kota attended the OGP Global Summit in Estonia.

PSAM director, **Jay Kruuse** supported a Health Justice Initiative group analysing four COVID Vaccine Contracts released after a High Court judgement against the National Department of Health. Kruuse was interviewed by radio and newspapers.

On 8 August 2023, the PSAM Budget and Advocacy Coordinator, Ms Lisa Higginson and the PSAM Director, Mr Jay Kruuse, briefed representatives of the Organisation for Economic Co-operation and Development, the World Bank, and the African Development Bank, who are currently assessing the adequacy of procurement systems within the South African Government in accordance with the [MAPS](#).

On 13 and 14 September 2023, the PSAM hosted the 3rd Regional Dialogue for Non-State Actors in Johannesburg. The dialogue focused on Accelerating SADC's Development through Socially Accountable Generation and Use of Public Resources and included in-person and hybrid attendance from stakeholders across the SADC region.



PSAM Staff, from left to right: Bukewla Makasi, Jay Kruuse, Luyanda Shilangu, Vongai Maroyi and Samantha Beynon.

Photo: Chris Marais.

Journalism and Media Studies

Books/Chapters/Monographs

Aiseng, K.M.

Aiseng, K.M. (2023) Gender and culture shock at university: Perspectives of first-year male students from a public university in South Africa. In: Aloka, P.J. and Mukuna, K.R. (eds.). *Coping Mechanisms for First Year-Students Transitioning to Higher Education*. USA: IGI Global. p.84-103. ISBN: 9781668469613.

Aiseng, K.M. (2023) Challenges and opportunities of preserving indigenous knowledge using digital technologies: The case of Bogwera. In: Masenya, T.M. (ed.). *Digital Preservation and Documentation of Global Indigenous Knowledge Systems*. USA: IGI Global. p.123-141. ISBN: 9781668470244.

Dalvit, L.

Dalvit, L. (2023). Please Do Not Call It Human Right: A Southern Epistemological Perspective on the Digital Inclusion of People with Disabilities in South Africa. In Chari, T., and Akpojivi, U. (Eds.) *Communication Rights in Africa: Emerging Discourses and Perspectives*. Routledge. p.55-69. ISBN: 9781000955040.

Concerts, Exhibitions, Performances, Workshops, Events

Ngqezana, K.

Mcconnachie, B., Madiba, E.M., Mathebula, P.N., Matyobeni, T., **Ngqezana, K.** and Moyo, V.O. Principal investigator and curator. Indigenous Marine Innovations for Sustainable Environments and Economies (IMIsEE): A Sound Postcard Exhibition. *Sound Postcard Exhibition*. AMAWI Literary Museum, Makhanda. South Africa. 24 November - 6 December 2023.

Schoon, A.

Schoon, A. Keynote address. "Foregrounding the human in the time of AI: What do we mean by inclusive digital humanities?" *Digital Humanities Association of South Africa (DHASA)*. Nelson Mandela University, Gqeberha. South Africa. 29 November 2023.

Dalvit, L.

Dalvit, L., De Leyen, T., de Neergaard, K., Marler, W., Özkul, D., Van Bruyssel, S., Verhulst, B. and Uy-Tioco, L. "Working Towards a More Equitable Mobile Communication Research Design: Reflecting on Gender, Race, Inequality and Marginalisation". *Panel participation at the Mobile Communication preconference of the 73rd International Communication Association (ICA) conference*. Toronto, Canada. 24 May 2023

Dalvit, L. Participation in the Blue-Sky Big Ideas session "The Future of Disability Communications Research". *73rd International Communication Association (ICA) conference*. Toronto, Canada. 25 - 29 May 2023.

Dalvit, L. Guest lecture titled "Inclusione digitale a (dis)abilita' in Sudafrica: riflessioni critiche sui modelli teorici" (Digital inclusion and (dis)ability in South Africa: critical reflections on theoretical models) for PhD students and staff in the Department of Philosophy, Sociology, Pedagogy and Applied Psychology at the University of Padua (Italy). 1 September 2023.

Uzuegbunam, C.E.

Uzuegbunam, C.E. Panel Keynote Speaker: "Challenges and Pathways Forward for African Scholars". *Global Knowledge Exchange Preconference, International Communication Association Regional Conference*. University of Cape Town, 15 November, 2023.

Creative Writing and Media

Garman, A. and Rennie, G.M.

Garman, A. and Rennie, G.M. (2023) Lines Land Slant. In: Brown, D., Moolman, K. and Sithole, N. (eds.). *Notes from the Body*. Durban: UKZN Press.

Rennie, G.M. and Garman, A.

Rennie, G.M. and Garman, A. (2023) Lines Land Slant. In: Brown, D., Moolman, K. and Sithole, N. (eds.). *Notes from the Body: Health, Illness, Trauma*. Durban: UKZN Press.

Uzuegbunam, C.E.

Uzuegbunam, C.E. (2023). Expert Guest on Episode 5: Nigeria's TV & Film Industry, *News24 Podcast, "Bingeing Without Borders"*. 6 January 2023.

Peer Reviewed Subsidy-Earning Journal Research Publications

Adjin-Tettey, T.

Adjin-Tettey, T. (2023) Ghana's Right to Information (RTI) Act of 2019: Exploration of its implementation dynamics. *The African Journal of Information and Communication (AJIC)*. 32 (2023). p.1-17.

Adjin-Tettey, T. and Braimah, S. (2023). Assessing the safety of journalism practice in Ghana: Key stakeholders' perspectives. *Cogent Social Sciences*. 9 (1). p.1-11.

Adjin-Tettey, T.D., Asuman, M. and Ayim-Segbefia, M.S. (2023). Safety of Journalists from a Gendered Perspective. Evidence from Female Journalists in Ghana's Rural and Peri-Urban Media. *Communitas*. 28, 133-150.

Bombi, T.

Bombi, T., Ncube, V. and Malacarne, J. (2023) Women Journalists on the Frontline: Exploring Violence Enacted Against Women Journalists in Brazil and South Africa. *African Journal of Gender, Society & Development*. 12 (2). p.235-262.

Boqo, B.

Boqo, B. (2023) 'Let Black Girls Be': The (Insta) poetry of Upile Chisala and its resistance to coloniality of being. *European Journal of English Studies*. 27 (1). p.81-100.

Boshoff, P.

Boshoff, P. (2023) New mythologies: violence and colonialism in Hollywood blockbusters. *Safundi*. 2023 (2023). p.1-5.

Dalvit, L.

Battisti, F. and **Dalvit, L.** (2023) Celebrating authentic bodies: Instagram (self)representations of models with disabilities in South Africa. *Hermes: Journal of Communication*. 25 (2023). p.7-22.

Dalvit, L. (2023). "Mobile Communication and Urban/Rural Flows in a South African Marginalised Community". *American Behavioral Scientist*. 67(7), 913-925.

Ndlovu, N.

Ndlovu, N. (2023) Coloniality and the Mbuya Nehanda Statue: A Decolonial Analysis of Twitter Users? Comments. *Critical Arts*. 37 (1). p.1-16.

Schoon, A.

Schoon, A. and Bosch, T. (2023) TikTok and memetic activism against racism in South Africa. *Information Communication and Society*. 2023 (2023). p.1-11.

Uzuegbunam, C.E.

Uzuegbunam, C.E. and Ononiwu, C.R. (2023) 'If it is circulating widely on social media, then it is likely to be fake news': Reception of, and motivations for sharing, COVID-19-related fake news among university-educated Nigerians. *The African Journal of Information and Communication (AJIC)*. 31, p.1-23.

Peer-reviewed Proceedings

Aiseng, K.M.

Gamede, S. and **Aiseng, K.M.** Analysis of South African Media Coverage of the 2022 KZN Floods. *The International Conference on Media Science and Digital Communication*. Virtual, Pitakotte. Sri Lanka. December 2022.

Research Papers Presented at Academic/Scientific Conferences (Non-peer-reviewed Proceedings)

Aiseng, K.M.

Aiseng, K.M. Political Economy of Languages in South African Higher Education: Implications for Decolonization. *International Conference on Language, Multilingualism and Decolonization Practices in Higher Education*. The University of Free State, Bloemfontein. South Africa. July 2023.



Photo: Chris Marais.

Aiseng, K.M. "The Queen is Dead": Black Twitter's Global Response to Queen Elizabeth's Death. *International Communication Association in Africa Conference*. University of Cape Town, Cape Town. South Africa. November 2023.

Aiseng, K.M. and Masuku, M.L.

Aiseng, K.M. and Masuku, M.L. Epistemological Challenges and Opportunities in Decolonizing AI in Media and Communication Education: A Literature Review. *South African Communication Association Conference*. AFDA, Braamfontein. South Africa. September 2023.

Boshoff, P.

Boshoff, P. The heart of neoliberalism: YouTube couple influencers in contemporary South Africa. *ICA Africa*. UCT, Cape Town. South Africa. November 2023.

Boshoff, P. The sacred and the social: celebrity healers on Instagram. *African Humanities Association*. UCT, Cape Town. South Africa. November 2023.

Dalvit, L.

Battisti, F. and Dalvit, L. (2023). "Humor que duele: una exploración interseccional de chistes sobre mujeres negras con discapacidad en TikTok en Sudáfrica" (Humor that hurts: an intersectional exploration of jokes about Black women with disabilities on tikTok in South Africa). *Paper presented at the 'Hate Expressions, Digital Media and Detection Processes congress'*. 19 - 20 October 2023, Madrid (Spain).

Dalvit, L. (2023). "Nothing about us: Exploring the Constructive Absence of (dis)ability in the South African Digital Public Sphere". *Paper presented at the International Association for Media and Communication Research (IAMCR) conference*. 9 - 13 July 2023, Lyon (France).

Battisti, F. and Dalvit, L. (2023). "Children, Angels and Daemons: the Coloniality of Print Media Representations of (dis)ability in South Africa (1977 - 2023)". *Paper presented at the Media, History and Social Inequalities preconference of the International Association for Media and Communication Research (IAMCR) conference*. 8 July 2023, Lyon (France).

Dalvit, L. (2023). "Data Justice and the Digital Inclusion of People with Disabilities in South Africa". *Paper presented at the 3rd Data Justice Conference*. 19 - 20 June 2023, Cardiff (UK).

Dalvit, L. (2023). "A Multiverse under Lockdown: An Analysis of Mailing List Posts by Blind and Visually Impaired People in South Africa during the COVID-19 pandemic". *Paper presented at the 21st Annual International Conference on Communication and Mass Media*. 8 - 10 May 2023, Athens (Greece).

Dalvit, L. (2023). "The Coloniality of Accessibility Links: From Universal Design to a Decolonial Model of (Dis)ability". *Paper presented at the 17th International Conference on Digital Society*. 24 - 28 April 2023, Venice (Italy).

Fafowora, B.L. and Aiseng, K.M.

Fafowora, B.L. and Aiseng, K.M. Gender-Bending and Cross-Dressing: Analysis of Self-Representation and Gender Performativity in the Nigerian Entertainment Industry. *Trends in Media and Communication Conference*. University of Ghana, Accra. Ghana. November 2023.

Fafowora, B. L.

Fafowora, B. L. (2023). Gender and Media: An exploration of experiences of sexual harassment among female interns in Nigerian newsrooms. *Paper presented at the East African Communication Association (EACA) Conference*. Kigali, Rwanda. 29 -31 August 2023.

Fafowora, B.L. (2023). Leveraging Disruptive Technologies: Emerging Perspectives on the Utilisation of Artificial Intelligence for academic publishing. *Paper presented at the South African Communication Association (SACOMM) Conference*. Johannesburg, South Africa. 27 - 29 September 2023.

Fafowora, B.L. and Aiseng, K.A. (2023). Gender-Bending and Cross-dressing: Analysis of young people's reactions to self-representation and gender performativity in the Nigerian cyberspace. *Paper presented at the Trends in Media and Communication Conference (TIMC) Conference*. Ghana. 1 - 3 November 2023.

Fafowora, B.L. (2023). Cyber-activism, Citizen Journalism, and Fake News in Africa: A Case of the EndSARS Protest. *Paper presented at the International Communication Association (ICA) in Africa Conference*. Cape Town, South Africa, 16 - 18 November, 2023.

Garman, A.

Garman, A. Kapuscinski's magic journalism in Africa. *International Association of Literary Journalism Studies*. University of Gdansk, Gdansk. Poland. May 2023.

Garman, A. Dateline inner-city Johannesburg: the people and the buildings caught up in the rejuvenation of an African metropolis. *International Association of Literary Journalism Studies*. University of Gdansk, Gdansk. Poland. May 2023.

Garman, A. The survival of journalism in a time of planetary crisis. *East African Communication Association*. University of Rwanda, Kigali. Rwanda. August 2023.

Garman, A. Body speech in the South Africa public sphere. *ICA Africa*. UCT Business School, Cape Town. South Africa, November 2023.

Isaacs De Vega, T.

Isaacs De Vega, T. "Rethinking Print Culture, Media, Digital, and Oral History as Archive, Evidence, and Method: From Africa to the World." John Hopkins University.

Isaacs De Vega, T. Presented on the theme *Umshumayeli Wendaba* and the early African language press as a site of intellectual struggle... 1837 - 1841.

Isaacs De Vega, T. Presented at the 3minute thesis competitions. Presented at the national 3MT competition. Presented at the institutional stage and came first runner-up in the UNISA 3MT challenge.

Ndlovu, N.

Ndlovu, N. "Old problems, new solutions? Towards a decolonial approach to Internet research ethics in the Global South." *ICA in Africa conference*. UCT, Cape Town, 16 - 18 November 2023.

Ndlovu, N. "Fight for your marriage by prayer": Exploring the manifestations of evangelical femininity on selected Zimbabwean women's Facebook groups. *SACOMM conference*. AFDA Johannesburg, 27 - 29 September 2023.

Ndlovu, N. "Diaspora, Space and Place: Negotiating identity in Zimbabwean women's online spaces." *EACA conference*. Kigali, Rwanda, 28 - 30 August 2023.

Rennie, G.

Rennie, G. Do you ever: D is for Disability. *8th International Symposium on Poetic Inquiry*. Capital 15 on Orange Hotel, Cape Town. South Africa. May 2023.

Schoon, A.

Schoon, A. "Machine learning and coloniality". *First African Humanities Association conference*. UCT, Cape Town. South Africa. November 2023.

Schoon, A. Panel Discussion on the DH-Ignite Open Seeds Fellows. *Digital Humanities Association of South Africa (DHASA) 2023 conference*. Nelson Mandela University, Gqeberha. South Africa. November 2023.

Schoon, A. "Involving journalists in science engagement between communities and scientists". *Public Communication of Science and Technology Conference 2023*. Rotterdam, Netherlands. April 2023.

Schoon, A. "Last Grave at Dimbaza: Exploring a film's future on its 50th anniversary". *SACOMM 2023 Conference*. AFDA, Johannesburg Campus. South Africa. September 2023.

Uzuegbunam, C.E.

Uzuegbunam, C.E. "The State of Artificial Intelligence in Africa: Ethical, Policy, and Regulatory Perspectives and Contestations." *Annual International Meeting of African Studies Association, African Presences*. 29 November - 2 December 2023, Marriott Marquis Hotel, San Francisco, California.

Uzuegbunam, C.E. "South African university students' use of AI-powered tools." *International Communication Association in Africa Regional Conference, Decentering International Communication Studies: African Perspectives*. 16 - 18 November, 2023.

Uzuegbunam, C.E. "South African Undergraduate Students' Uses and Understanding of AI-Powered Tools: A multi-university study." *Annual Conference of the South African Communication Association (SACOMM), 'Media and Communication Education: Driving Social Change'*. AFDA, Johannesburg. 27 - 29 September, 2023.

Uzuegbunam, C.E. "Youth, COVID-19, and popular imaginaries: Young adults' negotiation of socio-health elements during COVID-19." *PANCOPOP Symposium: Pandemic Communication and Populism*. Loughborough University, UK. 12 - 13 June 2023.

Uzuegbunam, C.E. "Young people's negotiation and imaginaries of Health Information Disorder and its interdependencies during a global pandemic." *International conference of the International Communication Association (ICA), Reclaiming Authenticity in Communication*. Sheraton Hotel Centre, Toronto, Canada, 25 - 29 May 2023.

Non-Subsidy Earning Publications

Dalvit, L.

Dalvit, L. (2023). A Critical exploration of YouTube texts by and about people with disabilities in South Africa. *Mediascapes journal*. 21(1), 344-358.

Isaacs De Vega, T.

Isaacs De Vega, T. (2023). Nurturing Emerging Scholars Programme (NESP). Department of Higher Education and Training.

Uzuegbunam, C.E

Uzuegbunam, C.E. and Bosch, T. (2023). "South African university students use AI to help them understand - not to avoid work." *The Conversation*. 19 November. (Also appeared in *Mail & Guardian; Daily Maverick; Times Live; News24*).

RHODES UNIVERSITY

Public Service Accountability Monitor (PSAM)



Mr Jay Kruise
Director

An affiliated institute of the School of Journalism and Media Studies at Rhodes University

Introduction

During the course of 2023 the PSAM staff engaged in various research and capacity building initiatives. The most significant of these are detailed below.

Distinguished Visitors / International Visits

In September 2023, the International Transparency and Accountability Conference (ITAC) was hosted by the Wajibu Institute of Public Accountability in Arusha, Tanzania and brought together practitioners mostly from East and Southern Africa to reflect on climate adaptation and mitigation with a focus on the effectiveness of national and transnational accountability frameworks. PSAM's Training Coordinator **Mr Luyanda Shilangu** attended and PSAM also supported the attendance of (thirteen) 13 civil society representatives with a focus on natural resource governance, climate change, climate financing and accountability mechanisms for a just transition.

Rachel Gondo (Head of PSAM's Regional Learning Program) and **Zukiswa Kota** (Head of PSAM's South Africa Program) represented PSAM at the 2023 Open Government Partnership's (OGP) Global Summit held in Estonia on 6 - 7 September 2023. They co-organised session 50 and hosted a System Aware Social Accountability Roundtable that enabled global field-wide conversations on reimagining social accountability. Furthermore they co-organised a Malawi OGP spotlight.

Rachel Gondo represented PSAM at the 3rd International Quality Education Conference (IQEC) held from 27 to 29 November 2023 in Tanzania. PSAM also supported the attendance of 14 rural youth representatives from Mozambique, Malawi, Zimbabwe and Tanzania.

Significant Research Aligned Events

Supporting research and advocacy on budget transparency and open data remains a central priority of the PSAM. The PSAM Director Jay Kruise was lead researcher for the 2023 Open Budget Survey of South Africa which will culminate in the global survey's release in May 2024.

During 2023, Lindokuhle Vellem (Analyst at the PSAM), led on the development of an Accountability Toolkit to support civic actors and media fellows involved in the Action for Accountability Project that is being implemented in specific areas of the City of Johannesburg and also within Makhanda.

PSAM collaborated with the Southern African Parliamentary Support Trust to develop an information guide on the basics of Public Debt and Debt Management for Parliament Budget Officers (Malawi, Zambia and Zimbabwe). The guide can be accessed [here](#). A needs assessment was undertaken before the guide was developed with budget officers validating it at a meeting held in Lilongwe in June 2023.

Rachel Gondo and Zukiswa Kota contributed to a Gender Budgeting Paper in collaboration with the IBP and ZWRCN titled "Addressing Gender Responsive Budget Implementation: How civil society is holding governments accountable to gender promises in budget execution" which was published in October 2023.

Lisa Higginson (PSAM Budget and Advocacy Coordinator) and Jay Kruise (PSAM Director) undertook research in collaboration with the International Budget Partnership (IBP) which culminated in a research report titled Examining budget credibility in South Africa's Water and Sanitation Sector which was publicised on 11 September 2023.

RHODES UNIVERSITY

Public Service Accountability Monitor (PSAM)

Books/Chapters/Monographs

Kota, Z.

Kota, Z. (2023) The Urgency of Procurement Reform in South Africa? Social Justice and Corruption Crisis. In: *The D-Word: Perspectives on Democracy in Tumultuous Times*. Gqeberha: Mandela University Press. p.101-118. ISBN: 9781998959044.

Peer-reviewed Proceedings

Penxa, L.

Ramafi, P., Baduza, G. and Penxa, L. Investigating the Use of Big Data Analytics through Digital Transformation for Political Campaigns, South Africa. *Social Sciences International Research Conference*. The Capital Pearls, Umhlanga. South Africa. October 2023.

In order to participate in policy reform processes, the PSAM made the following submissions to various state entities and constitutional oversight bodies:

- PSAM submission to the Moseneke Committee - 30 January 2023.¹
- PSAM submission on DRAFT Beneficial Ownership regulations for trusts - 13 February 2023.²
- PSAM Presentation on Appropriation Bill 2023 - May 2023³
- Submission to the Department of Public Service and Administration on the draft Public Service Regulations - 19 April 2023.⁴
- PSAM submission to the Committee on the Rationalisation of Areas under the Jurisdiction of the Divisions of the High Court and Judicial Establishments ("the Committee") - 17 August 2023.⁵
- Submission to the Department of Cooperative Government and Traditional Affairs on the Intergovernmental Monitoring and Support Interventions Bill - 25 August 2023.⁶
- PSAM submission to Parliament on the Public Procurement Bill - 18 September 2023.⁷

1 <https://psam.org.za/wp-content/uploads/2023/10/PSAM-submission-to-the-Moseneke-Committee-dd-30-Jan-2023.pdf>

2 <https://psam.org.za/wp-content/uploads/2023/02/PSAM-submission-on-DRAFT-BO-regulations-for-trusts.pdf>

3 <https://psam.org.za/wp-content/uploads/2023/06/PSAM-Presentation-on-Appropriation-Bill-2023.pdf>

4 <https://psam.org.za/wp-content/uploads/2023/04/Submission-to-DPSA-iro-draft-Public-Service-Regulations-dd-19-April-2023.pdf>

5 <https://psam.org.za/wp-content/uploads/2023/10/PSAM-correspondence-re-Moseneke-Committee-Report-dd-17-Aug-2023.pdf>

6 <https://psam.org.za/wp-content/uploads/2023/08/A4A-submission-to-COGTA-iro-the-IMSI-Bill-25-August-2023.pdf>

7 <https://psam.org.za/wp-content/uploads/2023/09/PSAM-on-PPB-18-September-2023.docx.pdf>

FACULTY OF Law



Professor Laurence Juma
Dean of Faculty

Introduction

2023 was an exciting year for research in the Faculty of Law, and staff and students excelled on the research front. We hosted several interesting research seminars on a variety of topics, including presentations on *Monopsony and Protecting South African Workers' Bargaining Power Through Competition law*; *Legal pluralism as part of legal historical research: a (re)view of the methodology*; *African customary law and decolonial studies*.

We also hosted two (2) successful Research Pomodoro's during the course of the year, where staff could spend some quiet time focussing on research.

We also congratulated several staff members on their research achievements:

- Rhodes University LLM student and part-time lecturer, Hugh Harnett has been announced as the winner of the prestigious South African Law Reform Legal Essay Competition (SALRC) for 2021. The results were delayed due to COVID-19 restrictions and were only announced during 2023. He came first in the LLB category for his essay titled: "Should career assets be catered for upon divorce? The case for the inclusion of career assets as property in a spouse's marital estate". Mr Harnett was under the supervision of Professor Kruuse.
- Professor Kruuse, on sabbatical in 2023, finalised the Discussion Paper for the South African Law Reform Commission on Project 100E Review of Aspects of Matrimonial Property Law.



Professor Laurence Juma (Dean of Law) and Associate Professor Charlene Lubaale.
Photo: Faculty of Law.

Postgraduates / Graduations

Two of our LLM students graduated with distinction at the April graduation ceremony:

- **Julian Okeyo**, with distinction. Thesis: *The prosecution of forced marriage by international tribunals and courts in light of the principle of legality*. Supervisor: Associate Professor EC Lubaale.
- **Aimee Thorne**, with distinction. Thesis: *The proprietary consequences of foreign marriages for the purposes of estate planning and succession in South Africa*. Supervisor: Ms SEH Driver.

A record number of our Postgraduate students presented papers at the Rhodes Annual Post Graduate Conference, hosted by the Centre for Postgraduate Studies on 8 and 9 September 2023.

Tafadzwa Mavindidze, one of our LLM students, has been announced as the winner of the LLM category of the South African Law Reform Commission's Langa National Legal Essay Writing Competition. She attended an award ceremony with the Department of Justice and Constitutional Development dignitaries on 29 September 2023. Congratulations to Tafadzwa and her supervisor, **Professor Kruuse**.

Significant Research Aligned Events

A significant research event is when the Faculty awards an annual prize for the Faculty of Law Researcher of the Year to give formal recognition to those members of the Faculty who have made a significant contribution in the research area of academic excellence.

The Faculty congratulated **Associate Professor Charlene Lubaale**, the 2023 Faculty of Law Researcher of the Year Award recipient. Professor Lubaale excelled on the research front through her research outputs, conference participation, NRF rating, supervision and other research contributions. She published several articles on International Criminal Justice and Gender-Based Violence. She edited three (3) books that attracted DHET subsidy, to which she also contributed numerous chapters. Springer published the edited volume on *National Accountability for International Crimes in Africa* in 2022. She was also one of the editors of an edited volume on *Violence Against Women and Criminal Justice in Africa: Volume I, Legislation, Limitations and Culture and Volume II, Sexual Violence and Vulnerability* (2021, Springer, Switzerland). She is a member of the Research and Publication Committee of the Black Lawyers Association of South Africa and the *African Journal on Crime and Justice* Editorial member. She acted as a reviewer for several national and international journals and NRF reviews, supervised Postgraduate students and presented at numerous Conferences. She received her NRF Y-rating in 2021.

Books/Chapters/Monographs

Lubaale, E.C.

Lubaale, E.C. (2023) Elimination of discrimination against women. In: Rudman, A., Musembi, C.N. and Makunya, T.M. (eds.). *The Protocol to the African Charter on Human and Peoples' Rights on the Rights of Women in Africa: A Commentary*. Pretoria University Law Press. p. 56-73. ISBN: 9781776411788.

Peer Reviewed Non-Subsidy-Earning Journal Research Publications

Lubaale, E.C.

Lubaale, E.C. (2023) The Gendered Impact of COVID-19 Directives on Access to Criminal Justice in South Africa. *African Journal of Crime and Justice*. 1 (2022). p.1-11.

Van Coller, H.

Van Coller, H. (2023) Administrative Law. *Yearbook of South African Law*. 3 (1). p.76-104.

Van Coller, H. (2023) Administrative Law. *Quarterly Review of South African Law*. 2023 (1-3). p.1-15.

Peer Reviewed Subsidy-Earning Journal Research Publications

Bothma, F.P.

Snyman, I. and Bothma, F.P. (2023) Getting Ahead of the "Game": The Reclassification of Wild Animals Contained in Protected Areas as Res Publicae. *Potchefstroom Electronic Law Journal*. 26 (1). p.1-37.

Campbell, J.

Campbell, J. (2023) Preventative lawyering, therapeutic jurisprudence and relational lawyering: Practical application in legal practice and justice education. *Stellenbosch Law Review*. 34 (1). p.76-100.

Harnett, H.N. and Kruuse, H.

Harnett, H.N. and Kruuse, H. (2023) Proper Financial Planning and Divorce: Failure to Consider the Antenuptial Contract. *Journal of South African Law/Tydskrif vir die Suid Afrikaanse Reg. (TSAR)*. 4 (2023). p.822-831.

Kruuse, H.

Kruuse, H. and Mwambene, L. (2023) Recognising form through function in the context of integrating the bride requirement in customary marriages in South Africa. *African Human Rights Law Journal*. 2023 (23). p.354-385.

Kruuse, H. (2023) Transforming litigation in customary marriage disputes: Ubuntu and the responsibility of legal practitioners. *Acta Juridica*. 2023 (1). p.19-45.

Lubaale, E.C.

Lubaale, E.C. (2023) Maternal Health Rights of Refugee Women in Uganda: Confronting the Multiple Layers of Vulnerability. *Politics of Citizenship and Migration*. F1658 (2023). p.213-246.

Malahleka, M.

Malahleka, M. (2023) The right to data portability: a ghost in the protection of personal information. *Tydskrif vir die Suid-Afrikaanse Reg*. 2023 (1). p.1-19.

Ndemera, T.J.

Ndemera, T.J. (2023) Unfulfilled Rights to Education and Development for Unaccompanied Child Refugees Under Zimbabwe's Encampment Policy. *Politics of Citizenship and Migration*. 1658 (2023). p.295-322.

Ndyulo, N.L.L.

Ndyulo, N.L.L. (2023) Protecting the right to Identity against Catfishing: What's the Catch? *Obiter*. 44 (2). p.308-330.

Ndyulo, N.L.L. and Mashinini, T.N.

Ndyulo, N.L.L. and Mashinini, T.N. (2023) Setting boundaries for image misappropriations through online catfishing. *SA Mercantile Law*. 34 (3). p.332-347.

Research Papers Presented at Academic/Scientific Conferences (Non-peer-reviewed Proceedings)

Campbell, J.

Campbell, J. "Preventative lawyering and therapeutic jurisprudence: a dramatized narration and interactive session to breathe life into these concepts and to illustrate their practical application". *11th Worldwide Conference of the Global Alliance for Justice Education (GAJE): Justice Education: Building Resilience and Strong Connections in Times of Global Challenges*. Stellenbosch University, Stellenbosch. South Africa. December 2023.

Van Coller, H.

Van Coller, H. Mediation and Arbitration in Religious and Customary Courts and Tribunals in South Africa. *Law, Religion, and Reconciliation in Africa*. Abidjan, Abidjan. Cote d'Ivoire. May 2023.

A record number of our Postgraduate students presented papers at the Rhodes Annual Postgraduate Conference, hosted by the Centre for Postgraduate Studies in September 2023.



Thembelani Ncube - A new approach to apparent authority in the Law of Agency: Makate's case from the Faculty of Law at the 2023 RU Postgraduate Conference.



Xolelwa Mkula - The 'cost' of living customary law: A critical analysis of the evidentiary hurdles that women face in customary marriage disputes from the Faculty of Law at the 2023 RU Postgraduate Conference. Photos: Faculty of Law.

DEPARTMENT OF Linguistics and Applied Language Studies



Professor Mark de Vos
Head of Department

Introduction

The Department of Linguistics and Applied Language Studies at Rhodes University continues to uphold its vision of becoming a leading centre of Linguistic study in Southern Africa. Formerly known as the *Department of English Language and Linguistics*, our transition to the more inclusive name of *Linguistics and Applied Language Studies* reflects our core commitment to exploring language through a linguistic-disciplinary subjectivity.

Our research emphasizes the importance of formal linguistic studies as well as applied approaches, particularly within the context of language in Africa to address pertinent societal challenges, such as the inadequacies in indigenous language literacy education, reading literacy, language documentation, endangered and less-studied languages and discourse analytic approaches to text. Our vision underscores the transformative potential of linguistic research in equipping people with essential linguistic tools to make sense of and understand their multilingual worlds.

Postgraduates / Graduations

We celebrated the graduation of three (3) PhD candidates and three (3) MA students. Our annual Postgraduate conference featured presentations from twenty-seven (27) scholars at various stages of their Postgraduate journeys, covering a diverse spectrum of topics. Presentations ranged from investigating the role of video in isiXhosa literacy development to analyzing media coverage of the Gaza conflict and studying language borrowing in Africa. Notable studies also explored phonological phenomena in local dialects, machine learning applications in language analysis, and identity construction through educational language practices.



Our vision underscores the transformative potential of linguistic research in equipping people with essential linguistic tools to make sense of and understand their multilingual worlds.

Distinguished Visitors / International Visits

The Department is proud to have hosted two (2) Visiting Scholars of the African Humanities Programme. Richardson Addai-Mununkum explored Ghanaian High School Pidgin English and Ememobong Udoh explored the phonology of Anaañ and Efik reduplication.

Dr Camilla Christie, a Postdoctoral Fellow in our Department, has made groundbreaking contributions to Southern African socio-historical and contact linguistics. Currently her research investigates the borrowing and dispersal of botanical terminology across regional speech communities, exploring sociological and environmental motivations and their impact on language taxonomy.

We continue to foster a variety of international links through our Research Associates, Aaron Braver, Didier Demolin as well with project partners who draw our students into a variety of research.

Significant Research Aligned Events

Professor Mark de Vos contributed to the international project, "Agreement Mismatches in Experimental Syntax: from Slavic to Bantu," funded by the Leverhulme Trust and this project

includes research partners at Rhodes, UFS, UKZN and University College London. The project examined gender agreement in coordination and animacy effects across South Slavic and Southern Bantu languages.

Our seminar series featured a diverse array of presentations. **Sasha-Lee Schafli**, a PhD candidate, investigated the use of video for developing L1 Foundation Phase literacy in isiXhosa, emphasising multimodal analysis.

Richardson Addai-Mununkum, a Visiting Scholar, explored Ghanaian High School Pidgin English as a decolonial practice in asserting African urban youth identities. Ememobong Udoh, another visiting scholar, examined reduplicative constructions in Anaañ and Efik languages through Correspondence Theory.

Finally, our esteemed **Emeritus Professors Silvester Ron Simango** and **Ralph Adendorff**, have supervised numerous students and co-published with both students and staff, significantly enhancing our Department's research output. Their dedication to mentorship and scholarly excellence remains a cornerstone of our Departmental research ecosystem.

Linguistics and Applied Language Studies

Books/Chapters/Monographs

Simango, S.R.

Simango, S.R. (2023) Multilingual practices and the changing structure of African languages. In: Simango, S.R. (ed.). *A Southern African Perspective on Language: Language policy, planning and practice in the era of linguistic decolonization*. Cape Town: University of the Western Cape / Centre for Advanced Studies of African Society. p.41-59. ISBN: 9781920447045.

Peer Reviewed Subsidy-Earning Journal Research Publications

Adendorff, R.D.

Smith, J. and **Adendorff, R.D.** (2023) Exploring the ecosystem of meaning: representation of gesture and its contribution to the visual communication of attitude in South African picture books. *Visual Communication*. 2023 (2023). p.1-22.

De Vos, M.

De Vos, M. and Riedel, K. (2023) Decolonising and transforming curricula for teaching linguistics and language in South Africa: Taking stock and charting the way forward. *Transformation in Higher Education*. 8 (2023). p.1-12.

Schmauss, L.S. and Kilian, K.

Schmauss, L.S. and Kilian, K. (2023) Hedging with modal auxiliary verbs in scientific discourse and women's language. *Open Linguistics*. 9 (1). p.1-27.

Sieborger, I. and Adendorff, R.D.

Sieborger, I. and Adendorff, R.D. (2023) 'Eye on the big prize!': Iconizing the Democratic Alliance in the Daily Sun. *Stellenbosch Papers in Linguistics Plus / SPiL Plus*. 66 (2023). p.47-86.

Simango, S.R.

Ma, X. and Simango, S.R. (2023) The search for V-stranding VP ellipsis in isiXhosa. *Southern African Linguistics and Applied Language Studies*. 41 (3). p.315-335.

Peer-reviewed Proceedings

De Vos, M.

Savic, S. and **De Vos, M.** Tense and Aspect of isiXhosa: Recent Past forms with and without the Auxiliary verb 'be'. *8th World Congress of African Linguistics (WOCAL)*. Kyoto University, Kyoto. Japan. January 2023.

Research Papers Presented at Academic/Scientific Conferences (Non-peer-reviewed Proceedings)

Adetomokun, I.J.

Adetomokun, I.J. Godfatherism politics and enactment of entitlement: A multimodal analysis of the Nigerian presidential primary campaign speech of Bola Ahmed Tinubu. *32nd European Systemic Functional Linguistics Conference*. Universidade de Vigo, Vigo. Spain. June 2023.

Sieborger, I.

Sieborger, I. A revolution in decline: Iconization in the media statements of the African National Congress in South Africa. *2nd Online International Systemic Functional Linguistics Interest Group Conference*. Online. International. November 2023.

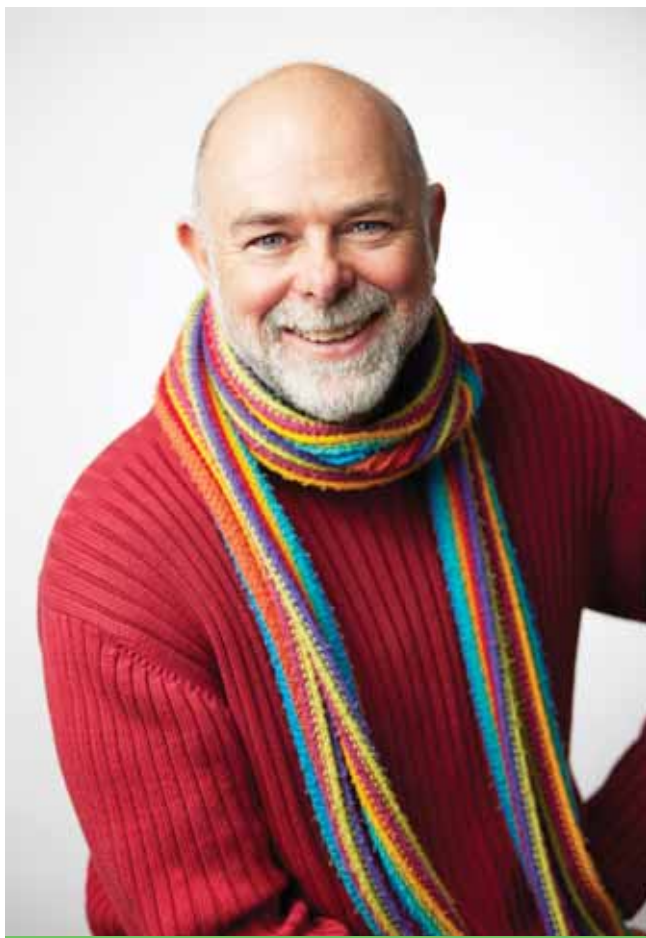
Simango, S.R.

Simango, S.R. Possessions, affectedness and the grammar of body parts. *Inaugural Conference of the African Humanities Association*. University of Cape Town, Cape Town. South Africa. November 2023.



Photo: Chris Marais.

DEPARTMENT OF Literary Studies in English



Professor Anton Krueger
Head of Department

Introduction

In 2023, members of staff, Postdoctoral Fellows and Postgraduate students maintained a steady research output while also undertaking Postgraduate supervision and undergraduate teaching. Highlights of the year included the publication of a monograph by Dr Carol Leff, an affiliate of the Intersecting Diasporas Group (IDG), as well as the publication of a collection of essays by Professor Dan Wylie. Departmental staff presented at four (4) conferences: the fifth African Feminisms (Afems) Conference which was organised by the Department of Literary Studies in English, the sixth Mashariki (formerly Eastern African) Literary and Cultural Studies Conference which was hosted by the Department of Literature at Makerere University, as well as the *African Humanities Association Conference* and *The Colonial Wound and the Practice of Repair Colloquium*.

2023 marked the end of the Andrew W. Mellon Foundation funding for Urban Connections in African Popular Imaginaries (UCAPI). In 2017, the Department of Literary Studies in English was honoured to be awarded a five (5) year grant from the Andrew W. Mellon Foundation. This funding was allowed a No-Cost extension by the Andrew W. Mellon Foundation and was extended to the end of 2023. It was led by **Associate Professor Lynda Gichanda Spencer** with the assistance of **Dr Minesh Dass** and **Professor Sam Naidu**. By the end of 2023, UCAPI had provided funding to thirty-one (31) Postgraduate students and four (4) Postdoctoral Fellows. This diverse group of students and Postdoctoral Fellows produced research that foregrounds African literary and cultural productions.

Postgraduates / Graduations

In comparison to 2022, in 2023 there was a slight increase in the number of Postgraduate students who graduated. We had ten (10) honours, six (6) of whom passed with distinction. In addition to this, two (2) Masters students graduated, one (1) of whom attained a distinction.



The Department of Literary Studies in English has a new courtyard mural by Mookie Chapman.
Photo: Department of Literary Studies in English.

Distinguished Visitors / International Visits

Dr M Zirra. Stockholm University, Visiting Researcher, January - February 2023.

Dr EN Nabutanyi, Senior Research Associate, July 2023.

Significant Research Aligned Events

The Intersecting Diasporas Group (IDG), led by **Professor Sam Naidu** is housed in the Department of Literary Studies in English, Rhodes University. In 2023, Dr Carol Leff an affiliate of the IDG published a monograph titled *The Afropolitan Flâneur in Literature*. Dan Wylie also published a collection of essays *Seven Southern African Poets and the Natural World*.

Associate Professor Aretha Phiri was awarded the Kluge Fellowship at the Library of Congress in Washington DC (Dec 2022 - March 2023) which holds the *Ralph Ellison Papers*. Her research project entitled, "Ellison and South Africa," traces and explores this notable African American author's enduring influence on and relatedness to South Africa.

In July 2023, the fifth edition of the African Feminisms (Afems) Conference returned to Rhodes University. It was hosted by the Department of Literary Studies in English and the Wits University Department of Fine Arts. The theme paid homage to Ama Ata Aidoo's debut novel *Our Sister Killjoy: Or Reflections from a Black-Eyed Squint* (1977). The keynote speakers included UCAPi affiliate Dina Ligaga, Pumla Dineo Gqola, Philiswa Lila and Mary Sibande. Apart from the keynote, there were eight (8) affiliates who presented papers at this conference. These included six (6) Postgraduate students and three (3) academics. The affiliates who participated included Nedine Moonsamy and Danson Kahyana. The graduate students who presented were

Shilika Chisoko, Pearl Munemo, Nokwanda Dlamini, Catherine Bloy, Kananelo Tsuene, and Kudzai Barure. The Rhodes organising team included **Nomonde Ntsepo, Kimmera Pillay, Phumelo Helleman and Walter Peters.**

In August 2023, the editors of *The Journal of Eastern African Literary & Cultural Studies* (EALCS) offered a writing workshop to graduate students, emerging researchers and anyone embarking on the publication journey. UCAPi affiliates Dina Ligaga, Tina Steiner and Grace A. Musila were amongst the facilitators of this workshop while graduate students Kananelo Tsuene and Kudzai Barure, and Postdoctoral Fellow **Joseph Kwanya** participated.

Lastly, the sixth Mashariki (formerly Eastern African) Literary and Cultural Studies Conference took place in Kampala, Uganda. This conference was organised by the Department of Literature, Makerere University in collaboration with the Mashariki Literary and Cultural Studies Conference Series. The 2023 edition of the conference was interested in the material, intellectual, spiritual, cultural and literary conditions that have shaped aesthetic and interpretative practices in and on the region across different epochs. In doing this, the conference hoped to provoke dialogue with the past, but also project future trajectories of aesthetic and interpretative practices. The following UCAPi affiliates presented their research at this conference; Dina Ligaga, and Tina Steiner. In addition to this, Nedine Moonsamy, John Wakota, Danson Kahyana and Grace A. Musila were amongst the facilitators of the workshop. Two (2) graduate students Kananelo Tsuene and Kudzai Barure, as well as Postdoctoral Fellow Joseph Kwanya also presented aspects of their research. By the end of the final year of the funding for UCAPi we had achieved most of our goals which included engaging in collaborative research with colleagues in and beyond Africa.

Literary Studies in English

Books/Chapters/Monographs

Harris, A.M.

Harris, A.M. (2023) Early Sesotho, isiXhosa and isiZulu Novels as World Literature. In: Fyfe, A. (ed.). *African Literature as World Literature*. p.115-138. ISBN: 9781501379956.

Wylie, D.

Wylie, D. (2023) Seven Southern African Poets and the Natural World. Makhanda: Atelier Books.

Concerts, Exhibitions, Performances, Workshops, Events

Barure, W.K.

Barure, W.K. Mentee. Mashariki Article Writing workshop. *The quest(ion) of leaning towards a liberal historiography in Edgar Zivanai Tekere's A Lifetime of Struggle (2007) and Cephas Msipa's In Pursuit of Freedom and Justice: A Memoir (2015)*. Makerere University, Kampala. Uganda. 22 August 2023.

Kwanya, J.M.A.

Kwanya, J.M.A. Mentee. Mashariki Article Writing workshop. *Images, Songs, and the Disnarrated: Alternative Narratives of the Italo-Ethiopian War in Maaza Mengiste's The Shadow King*. Makerere University, Kampala. Uganda. 22 August 2023.

Njovane, T.

Njovane, T. Presenter. Racial Trauma, Precarity and Grief in K. Sello Duiker's *Thirteen Cents*. Rhodes University Department of Political and International Studies Seminar. Rhodes University, Makhanda. South Africa. 24 February 2023.

Spencer, L.G.

Spencer, L.G. Organiser. African Feminisms: Our Sister(s) Killjoys. *The Fifth African Feminisms Conference*. Rhodes University, Makhanda. South Africa. 6 - 8 July 2023.

Spencer, L.G., Ligaga, D. and Steiner, B.C. Editor and Mentor. Writing Workshop with the Editors of *The Journal of Eastern African Literary & Cultural Studies*. *Writing Workshop at The 6th Eastern African Literary and Cultural Studies Conference*. Makerere University, Kampala. Uganda. 24 - 26 August 2023.

Tsuene, K.

Tsuene, K. Mentee. Mashariki Article Writing Workshop. *All fiction is the factual refracted: Exploring Literary Aesthetics in Selected War Narratives About Ethiopia*. Makerere University, Kampala. Uganda. 22 August 2023.

Creative Writing

Jaji, T.

Jaji, T. (2023). 2 poems and an introduction to edited poetry collection: *Tesserae: A Mosaic of poems by Zimbabwean Women*. Edited by Samantha Vazhure and Marian Christie. Suffolk: Carnelian Heart Publishing. ISBN: 9781914287466.

Jaji, T. (2023). Poem used as lyric for a song composed by Brittney Boykin. "Desert Songs" on *Visions: Song Sets for Tenor and Piano*. Record label: Centaur.

Jaji, T. (2023) "Preface: I Love Ambuya Phillis with Complexity, Pulled and Troubled by her Devotions" and "An/Arrangement on 'To a Gentleman on his Voyage to Great-Britain'". In: *Wheatley at 250: Black Women Poets Re-imagine the Verse of Phillis Wheatley Peters*. Edited by Danielle Legros Georges and Artress Bethany White. Cambridge, MA: Pangyrus.

Jaji, T. (2023). "Disaster" (poem). *Atlantic*. June, 2023, Volume 331 No. 5.

Jaji, T. (2023) Poetry. In: *Love's Remit / WhatsApp Message at 9:37 p.m. Interrupts Bach*. UK: Johns Hopkins University Press.

Distinguished Visitors

Nabutanyi, E.F.

Dr EF Nabutanyi. Makerere University, Kampala, Uganda. *Research*. January 2023.



UCAPI at the Mashariki Conference.

Back row, left to right: Nicklas Hällén, Kudzai Barure, Tina Steiner, Dina Ligaga, Kananelo Tsuene, Ashleigh Harris, Grace A. Musila and Lynda Gichanda Spencer.

Front row, left to right: Joseph Kwanya, Nedine Moonsamy and Danson Kahyana.

Photo: Department of Literary Studies in English.



UCAPI at Afems 2023. Seated, left to right: Lynda Gichanda Spencer, Sharlene Khan, Nedine Moonsamy, and Dina Ligaga. Second row, left to right: Kananelo Tsuene and Nokwanda Dlamini. Back row, left to right: Shilika Chisoko, Catherine Bloy, Pearl Munemo, Kudzai Barure and Gabriel Okonkwo.

Photo: Department of Literary Studies in English.

O'Key, D.

Dr D O'Key. University of Sheffield, Sheffield, United Kingdom. *Research*. April 2023.

Zirra, M.

Dr M Zirra. Stockholm University, Stockholm, Sweden. *Research*. January 2023.

Peer Reviewed Subsidy-Earning Journal Research Publications

Cornwell, D.G.N.

Cornwell, D.G.N. (2023) A Piece of My Self: The 'Wound' in the Writing of Richard Ford. *English Studies in Africa*. p.1-13.

Cornwell, D.G.N. (2023) Postcritique, Critique, Precritique: A Personal View. *English Academy Review*. p.1-11.

Harris, A.M.

Harris, A.M. (2023) Communal Intellection and Individualism in the African Novel. *Cambridge Journal of Postcolonial Literary Inquiry*. 9 (2). p.256-262.

Helgesson, A.S.

Helgesson, A.S. (2023) The text is dead! Long live the text! *Deutsche Vierteljahrsschrift für Literaturwissenschaft und Geistesgeschichte (DVJS)*. 97 (4). p.1033-1040.

Helgesson, A.S. and Stella, M.G.P. (2023) The Luso-African Literary World: Introduction. *Cambridge Journal of Postcolonial Literary Inquiry*. 10 (2). p.139-147.

Klopper, D.

Klopper, D. (2023) Literary Byways in Duncan Brown's *Finding My Way: A Review Essay*. *English in Africa*. 50 (2). p.95-112.

Marais, S.

Marais, S. (2023) 'Writing Home': Storytelling as Cultural Translation in Jolyn Phillips's *Tjeng Tjang Tjerries*. *English in Africa*. 50 (1). p.99-125.

Mason, P.

Mason, P. (2023) Towards a Pedagogics of Epiphany. *SOTL in the South*. 7 (1). p.27-40.

Mcgregor, J.A.

Mcgregor, J.A. (2023) Subtlety, Understatement and Omission in *The Lord of the Rings*. *English Studies in Africa*. 2023 (2023). p.1-11.

Nabutanyi, E.F.

Nabutanyi, E.F. (2023) Language, fiction, and heteropatriarchal critique in selected recent Ugandan short fiction. *Sociolinguistic Studies*. 17 (1-3). p.141-158.

Naidu, S.

Walsh, A. and Naidu, S. (2023) Reading Harm and Repair in Joanne Joseph's *Children of Sugarcane*. *Imbizo: International Journal of African Literary and Comparative Studies*. 14 (2). p.1-16.

Okonkwo, G.K.

Okonkwo, G.K. (2023) The Law on Precipice: Terrorism and the Intransigence of State Culprits in Charles Akinsete's *Dance of a Savage Kingdom and Ndubuisi Martins? Answers through the Bramble*. *International Journal of Literary Humanities*. 22 (2). p.61-80.

Okonkwo, G.K. (2023) Stimulating the Law through Ubuntu and Nagomi in *Three Japanese Short Stories*. *Prague Journal of English Studies*. 12 (2023). p.63-81.

Okonkwo, G.K. (2023) Culpability and Nature-Nature Infractions in Select Poems in Tanure Ojaide's *Narrow Escapes: A Poetic Diary of the Coronavirus Pandemic*. *Journal of Literary Studies*. 39 (2023). p.1-19.

Phiri, A.

Phiri, A. (2023) White Moral Projects and the Impossibility of Racial Repair: A Reflection on White Shame and Black (Dis)Inheritance in Damon Galgut's *The Promise*. *English Studies in Africa*. 66 (2). p.33-38.

Pillay, K.S.

Pillay, K.S. (2023) Missus versus Mistress: An Analysis of the Representation of the Institution of Polygamy in Sue Nyathi's *The Polygamist*. *Gender & Behaviour*. 21 (3). p.92-100.

Wyllie, D.

Wyllie, D. (2023) The Multispecies City in McCarthy's *Suttree* and Duiker's *Thirteen Cents*. *Journal of Literary Studies*. 38 (4). p.1-16.

Wyllie, D. (2023) 'A Sort of Arcadian Country': Plant-Life in Some Early South African Travelogues. *English in Africa*. 50 (1). p.7-28.

Research Papers Presented at Academic/Scientific Conferences (Non-peer-reviewed Proceedings)

Barure, W.K.

Barure, W.K. Writing from the margins: Alternative publishing strategies in Zimbabwe. *The 6th Mashariki Literary and Cultural Conference*. Makerere University, Kampala. Uganda. August 2023.

Bloy, C.S.

Bloy, C.S. "A Consideration of Form in Middle Eastern and South Asian Chick Lit". *Rhodes University Postgraduate Conference "Shaking the Table"*. Rhodes University, Makhanda. South Africa. September 2023.

Dlamini, N.T.

Dlamini, N.T. The use of non-verbal language in Damon Galgut's *The Promise Analysing the Paradox of The unhappy Slave*. *Afems: Our Sister(s) Killjoys*. Rhodes University, Makhanda. South Africa. July 2023.

Harris, A.M.

Harris, A.M. Re-negotiating the Literary Work: Koleka Putuma's *Multimodal Adaptations*. *The 6th Mashariki Literary and Cultural Conference*. 24 - 26 August 2023. Makerere University, Kampala. Uganda. August 2023

Klopper, D.C.

Klopper, D.C. The Poetics of Palaeoanthropology and Primatology: Louis Leakey's *Adam's Ancestors* and Jane Goodall's *In the Shadow of Man*. *The 6th Mashariki Literary and Cultural Conference*. Makerere University, Kampala. Uganda. August 2023.

Kwanya, J.M.A.

Kwanya, J.M.A. Counterfactual Narratives and Power Structures in African Historical and Speculative Fiction. *The 6th Mashariki Literary and Cultural Studies Conference*. Makerere University, Kampala. South Africa. August 2023.

Naidu, S.

Naidu, S. "Angry and Armed: Ambiguous Female Figures in African Noir". *African Humanities Association Conference*. University of Cape Town, South Africa. November 2023.

Njovane, T.

Njovane, T. (Keynote Address) "Word, Wound, Subject: Policing the Psyche after Colonialism". *The Colonial Wound and the Practice of Repair Colloquium*. University of Stellenbosch, Stellenbosch. South Africa. November 2023.

Okonkwo, G.K.

Okonkwo, G.K. Of Nuptiality and Nigerian culture: Straight Face Attitudes to Patriarchal Structures of Trauma in Lola Shoneyin's *The Secret Lives of Baba Segi's Wives*. *Afems: Our Sister(s) Killjoy*. Rhodes, Grahamstown. South Africa. July 2023.

Okonkwo, G.K. Childhood Trauma and Remembrance: Weaponised PTSD in Glaydah Namukasa's *The Deadly Ambition*. *6th Mashariki Literary and Cultural Studies Conference*. Makerere University, Makerere. Uganda. August 2023.

Spencer, L.G.

Spencer, L.G. Murder She Wrote: Creating Female Sleuths and Solving Crime. *Afems: Our Sister(s) Killjoys*. Rhodes University, Makhanda. South Africa. July 2023.

Spencer, L.G. Is Kansiime Anne's comedy revolutionary? Or is her transgressive comedy an adaptation of a long tradition of rebellious women? *The 6th Mashariki Literary and Cultural Conference*. Makerere University, Kampala. Uganda. August 2023.

Tsuene, K.

Tsuene, K. "A madwoman on a wild horse blazing through the hills": Exploring the Roles and Experiences of Women in Maaza Mengiste's *The Shadow King*. *Afems: Our Sister(s) Killjoy*. Rhodes University, Makhanda. South Africa. July 2023.

Tsuene, K. "All fiction is the factual refracted": Exploring Interpretative Practices in Selected War Narratives About Ethiopia. *Rhodes University Postgraduate Conference 2023 'Shaking the Table'*. Rhodes University, Makhanda. South Africa. September 2023.

Tsuene, K. All fiction is the factual refracted: Exploring Literary Aesthetics in Selected War Narratives About Ethiopia. *6th Mashariki Literary and Cultural Studies Conference*. Makerere University, Kampala. Uganda. August 2023.



Photo: Chris Marais.

DEPARTMENT OF Management



Professor Nadine Oosthuizen
Head of Department

Introduction

The Department of Management had a productive year, marked by several publications, and contributions to the field of management. Our Department has continued to prioritise research that addresses critical issues in management practice and theory, utilising a blend of theoretical insight and practical application to drive meaningful change in both academia and industry.

A distinctive feature of the Department's research culture is the diverse range of interests among its staff members. Our focus areas include Entrepreneurship, Financial Management, Financial Planning, Human Resource Management, Leadership, Marketing Management, Operations Management, Organisational Behaviour, Strategic Management, and Sustainable Business Practices. Staff continued their research, supervision and authoring with several contributions to books published and journal articles authored. Books were published in Human Resource Management and Operations Management and journal publications were authored in Procurement, Financial Planning and Financial Literacy. Research in the Department has collectively contributed to more than twenty (20) chapters in textbooks, three (3) journal articles, two (2) conference papers, and two (2) conference presentations. In addition to producing research outputs, staff in the Department of Management contribute to their discipline as journal editors and reviewers, conference reviewers and panel members, and external examiners of theses for other academic institutions. Our commitment to student development remains unwavering. By integrating research thinking and skills into the curriculum, particularly at the Postgraduate level, students attended a research methodology module and were guided to produce research treatises and dissertations.



Back row from left to right: Professor Mark Bunting, Theus Louw, Shafeek Sha, Trevor Amos, Mark Maritz. Front row from left to right: Lisa Maholo, Qondi Jali, Professor Lynette Louw, Professor Nadine Oosthuizen and Alyssa Williams.

Absent: Dr X. Antoni.

Photo: Department of Management.

Postgraduates / Graduations

In April 2023, we celebrated the graduation of two (2) Masters, and fourteen (14) Honours students, reflecting the strength and vitality of our Postgraduate programmes. Four (4) Masters theses and two (2) PhDs were submitted at the end of the year 2023 and should form part of the 2024 graduation ceremonies.

Significant Research Aligned Events

Professor Lynette Louw has been involved in the Inter-institutional collaboration project on enhancing postgraduate

education in South Africa as the Commerce co-ordinator. This collaborative project provides an opportunity for sector-wide conversations about building Postgraduate education and is directed at making an institution-level impact for all who participate. The project aims to understand current practices of Postgraduate education across the sector and internationally, identify the constraints on retention and throughput at the Postgraduate level, and identify key quality indicators for Postgraduate education regarding curriculum and examination.

Management

Books/Chapters/Monographs

Amos, T.

Amos, T. and Pearse, N.J. (2023) *Human Resource Management*. 6th Ed. Cape Town: Juta & Co. ISBN: 9783031194160.

Amos, T. (2023) Human Resource Management. In: Nieuwenhuizen, C. (ed.). *Business Management: An African Perspective*. 2nd Ed. Cape Town: Juta & Co. p.1-660. ISBN: 9781998962273.

Amos, T. and Pearse, N.J. (2023) Networking. In: Nieuwenhuizen, C. (ed.). *Entrepreneurship: An African Perspective*. 2nd Ed. Cape Town: Juta & Co. p.1-484. ISBN: 9781998962204.

Maritz, M.

Maritz, M. (2023) Lean systems strategy for operations. In: *Operations Management*. 4th Ed. Cape Town: Oxford University Press. p.281-313. ISBN: 9780190448738.

Maritz, M. (2023) Short-term scheduling. In: *Operations Management*. 4th Ed. Cape Town: Oxford University Press. p.257-279. ISBN: 9780190448738.

Maritz, M. (2023) Aggregate planning. In: *Operations Management*. 4th Ed. Cape Town: Oxford University Press. p.229-256. ISBN: 9780190448738.

Maritz, M. (2023) Process strategy, design, and management. In: *Operations Management*. 4th Ed. Cape Town: Oxford University Press. p.85-104. ISBN: 9780190448738.

Maritz, M. (2023) What is Operations Management. In: *Operations Management*. 4th Ed. Cape Town: Oxford University Press. p.2-33. ISBN: 9780190448738.

Maritz, M. (2023) Design of goods and services. In: *Operations Management*. 4th Ed. Cape Town: Oxford University Press. p.59-84. ISBN: 9780190448738.

Maritz, M. (2023) Inventory management. In: *Operations Management*. 4th Ed. Cape Town: Oxford University Press. p.132-167. ISBN: 9780190448738.

Maritz, M. (2023) Capacity planning. In: *Operations Management*. 4th Ed. Cape Town: Oxford University Press. p.202-228. ISBN: 9780190448738.

Maritz, M. (2023) Material requirements planning. In: *Operations Management*. 4th Ed. Cape Town: Oxford University Press. p.168-201. ISBN: 9780190448738.

Maritz, M. (2023) Forecasting. In: *Operations Management*. 4th Ed. Cape Town: Oxford University Press. p.106-131. ISBN: 9780190448738.

Maritz, M. (2023) Project management. In: *Operations Management*. 4th Ed. Cape Town: Oxford University Press. p.373-399. ISBN: 9780190448738.

Maritz, M. (2023) The future of operations management: Opportunities, challenges, and trends. In: *Operations Management*. 4th Ed. Cape Town: Oxford University Press. p.401-426. ISBN: 9780190448738.

Maritz, M. (2023) Supply chain management. In: *Operations Management*. 4th Ed. Cape Town: Oxford University Press. p.34-57. ISBN: 9780190448738.

Peer Reviewed Subsidy-Earning Journal Research Publications

Antoni, X.L.

Antoni, X.L. (2023) The role of family structure on financial socialisation techniques and behaviour of students in the Eastern Cape, South Africa. *Cogent Economics & Finance*. 11 (1). p.1-15.

Antoni, X.L., Kinsman, J. and Rootman, C.

Antoni, X.L., Kinsman, J. and Rootman, C. (2023) CFP(r) professionals perceptions of establishing client relationships in a South African context. *Journal of Economic and Financial Sciences*. 16 (1). p.1-12.

Antoni, X.L. and Maswena, K.

Antoni, X.L. and Maswena, K. (2023) The mediating effect of financial efficacy on financial knowledge and behaviour among South African consumers. *International Journal of Economics and Finance Studies*. 15 (1). p.532-549.

Babirye Nsereko, H., Tait, M. and Oosthuizen, N.

Babirye Nsereko, H., Tait, M. and Oosthuizen, N. 2023. The process of contract compliance: A public procurement perspective. *Southern African Business Review*. 26 (1). p.1-21. DOI: <https://doi.org/10.25159/1998-8125/11565>.

Peer-reviewed Proceedings

Antoni, X. and Saayman, M.

Antoni, X. and Saayman, M. 2023. The influence of financial socialisation technique, financial literacy, and subjective financial knowledge on the responsible financial behaviour of young financial professionals. *The 34th Annual Conference of the South African Institute for Management Scientists (SAIMS)*. Centurion, Gauteng, South Africa. 10 - 13 September 2023.

Amos, T. and January, N.

Amos, T. and January, N. The influence of strategic direction and organisational culture on the performance of SMEs in Nelson Mandela Bay. *34th Annual Conference of the Southern Africa Institute for Management Scientists (SAIMS)*. Centurion, Gauteng. South Africa. 10 - 13 September 2023.

Research Papers Presented at Academic/Scientific Conferences (Non-peer-reviewed Proceedings)

Antoni, X. and Saayman, M.

Antoni, X. and Saayman, M. 2023. The influence of financial socialisation technique, financial literacy, and subjective financial knowledge on the responsible financial behaviour of young financial professionals. *The 34th Annual Conference of the South African Institute for Management Scientists (SAIMS)*. Centurion, Gauteng, South Africa. 10 - 13 September 2023.

Amos, T. and January, N.

Amos, T. and January, N. The influence of strategic direction and organisational culture on the performance of SMEs in Nelson Mandela Bay. *34th Annual Conference of the Southern Africa Institute for Management Scientists (SAIMS)*. Centurion, Gauteng, South Africa. 10 - 13 September 2023.

DEPARTMENT OF Mathematics (Pure and Applied)



Professor Eric Andriantiana
Head of Department

Introduction

The Department of Mathematics is enjoying an increased research momentum. Our effort to strengthen and extend our research network materialised with the increased mobility of our researchers. A mini-conference and research retreat organised by some of our researchers are well aligned with this.

Distinguished Visitors / International Visits

The Rhodes Artificial Intelligence Research Group (RAIRG), led by Dr Atemkeng hosted three (3) international visitors:

- Professor Christopher Thron from the Texas A&M University-Central Texas, USA.
- Professor Franklin Tchakounte from the University of Ngaoundere, Cameroon.
- Dr Naomie Dassi from the University Institute of Technology, Cameroon.

During his six-month sabbatical **Dr Marcellin Atemkeng** visited the University of Ngaoundere, Cameroon and Curtin University, Australia. This strengthens an existing collaboration while establishing new ones.

Significant Research Aligned Events

Professor Eric Andriantiana organised a mathematical science mini-conference on the 22 - 26 January 2023 at the Mpekweni Beach Resort. The event was funded by the Future Professor Programme Phase 1. The participants were Professor Eric Andriantiana (Rhodes University), Dr Maya Makatini (a chemist from University of the Witwatersrand) and Dr Yaseera Ismail (a quantum computing physicist from the University of KwaZulu-Natal).

Dr Atemkeng Teufack during his visit to Curtin Institute of Radio Astronomy at Curtin University, Australia in 2023.

Photo: Department of Mathematics (Pure and Applied).



Professor Christopher Thron from the Texas A&M University-Central Texas, USA (in the middle) and four (4) members of the RAIRG.

Photo: Department of Mathematics (Pure and Applied).

Professor Andriantiana also chaired the organising committee of the 3rd edition of the Graph Theory Research Retreat. It took place in Stellenbosch on the 1 - 3 September 2023. Fourteen (14) participants attended, an almost 50% increase compared to the 2nd edition of the event in 2022. This event aims to bring early-career researchers and senior researchers to work together.

DEPARTMENT OF

Mathematics (Pure and Applied)

Peer Reviewed Subsidy-Earning Journal Research Publications

Atemkeng Teufack, M.

Njoya, A.N., Ngongag, V.L.T., Tchakounté, F., **Atemkeng Teufack, M.** and Fachkha, C. (2023) Characterizing Mobile Money Phishing Using Reinforcement Learning. *IEEE Access*. 12 (4). p.1-26.

Nguinabe, J., Tchakounte, F., Buhendwa, P.M. and **Atemkeng Teufack, M.** (2023) Fals-Ism: A Graph Isomorphism Framework for Multi-Level Detection of Falsified PDF Documents. *Journal of Computer Science*. 19 (5). p.667-676.

Savoudsou, B., Tchakounte, F., Yenke, B.O., Yel'emou, T. and **Atemkeng Teufack, M.** (2023) An Enhanced Dissection of Attacks in Wireless Sensor Networks. *International Journal of Computing and Digital Systems*. 14 (1). p.1-24.

Tchakounte, F., Manfouo, R.E.F., Ebongue Fendji, J.L.K., Bassole, D. and **Atemkeng Teufack, M.** (2023) SVDroid: Singular Value Decomposition with CNN for Android Malware Classification. *International Journal of Computing and Digital Systems*. 13 (1). p.1-15.

Varmantchaonala, C.M., Ebongue Fendji, J.L.K., Njafa, J.P.T. and **Atemkeng Teufack, M.** (2023) Quantum hybrid algorithm for solving SAT problem. *Engineering Applications of Artificial Intelligence*. 121 (4). p.1-17.

Ntsama, J.E., Tchakounté, F., Tchumi, D.T., Faissal, A., Kuete, F.A.F., Yves Effa, J., Udagopol, K.P. and **Atemkeng Teufack, M.** (2023) Determinants of Cybercrime Victimization: Experiences and Multi-stage Recommendations from a Survey in Cameroon. *Lecture Notes of the Institute for Computer Sciences, Social-Informatics and Telecommunications Engineering*. 499 (2023). p.317-337.

Njoya, A.N., Tchakounté, F., **Atemkeng Teufack, M.**, Udagopol, K.P. and Bassolé, D. (2023) Mobile Money Phishing Cybercrimes: Vulnerabilities, Taxonomies, Characterization from an Investigation in Cameroon. *Lecture Notes of the Institute for Computer Sciences, Social-Informatics and Telecommunications Engineering*. 499 (2023). p.430-445.

Bishop, N.T. and Pollney, D.

Giannakopoulos, T., **Bishop, N.T.**, Hilditch, D., **Pollney, D.** and Zilhao, M. (2023) Numerical convergence of model Cauchy-characteristic extraction and matching. *Physical Review D*. 108 (1). p.1-20.

Deyi, A. and **Atemkeng Teufack, M.**

Deyi, A., Nguembang Fadja, A., Goosen, E.D., Siwe Noundou, X. and **Atemkeng Teufack, M.** (2023) Dataset of Selected Medicinal Plant Species of the Genus *Brachylaena*: A Comparative Application of Deep Learning Models for Plant Leaf Recognition. *Journal of Computer Science*. 19 (11). p.1387-1397.

Nxumalo, M.S.

Nxumalo, M.S. (2023) Remote Sublocales. *Quaestiones Mathematicae*. 2023 (2023). p.1-18.

Olonijju, S.D.

Tijani, Y.O., **Olonijju, S.D.**, Otegbeye, O. and Babalola, A.R. (2023) Magnetic feature and regression analysis of Reiner-Philippoff boundary layer flow. *Numerical Heat Transfer, Part B: Fundamentals*. 6 (2024). p.1-11.

Olonijju, S.D. (2023) New sets of soliton solutions for the generalized Whitham-Broer-Kaup-Boussinesq-Kupershmidt system. *Results in Physics*. 52 (2023). p.1-7.

Tijani, Y.O., **Olonijju, S.D.**, Oni, M.O. and Akolade, M.T. (2023) Surface dynamics and thermophysical mechanics on Reiner-Philippoff. *International Journal of Modern Physics D*. 2023 (2023). p.1-11.

Right: Mathematical Sciences Mini-Conference at Mpekweni Beach Resort.

Below: The fourteen (14) participants of the 2023 Graph Theory research retreat.

Photos: Department of Mathematics (Pure and Applied).



Pollney, D.

Beckerling-Vinckers, U., de la Cruz-Dombriz, A. and **Pollney, D.** (2023) Numerical solutions for the $f(R)$ -Klein-Gordon system. *Classical and Quantum Gravity*. 40 (1). p.1-30.

Remsing, C.C.

Barrett, D.I. and **Remsing, C.C.** (2023) On the Schouten and Wagner curvature tensors. *Rendiconti del Circolo Matematico di Palermo*. 70 (2023). p.565-590.

Peer-reviewed Proceedings

Atemkeng Teufack, M.

Atemkeng Teufack, M. Anomaly Detection in Power Generation Plants with Generative Adversarial Networks. *International Conference on Electrical, Computer and Energy Technologies (ICECET)*. Cape Town, Cape Town. South Africa. November 2023.

Bishop, N.T.

Bishop, N.T. Developments in numerical relativity and gravitational wave observations. *The Sixteenth Marcel Grossmann Meeting*. Virtual, Roma. Italy. July 2022.

Naidoo, M., Bishop, N.T. and Van Der Walt, P.J.

Naidoo, M., Bishop, N.T. and Van Der Walt, P.J. Matter shells modifying gravitational wave signals. *The Sixteenth Marcel Grossmann Meeting*. Virtual, Roma. Italy. July 2022.

Okouma, P.M.

Ghosh, S., Human, R., Kuja, S.O., Smirnov, O.M., Molteno, T. and **Okouma, P.M.** Newly Designed Antenna Platform for Transient Array Radio Telescope (TART). *2023 International Microwave and Antenna Symposium (IMAS)*. Cairo, Egypt, Cairo. Egypt. February 2023.

Pollney, D.

Prevec, S.A., Buttner, S.H. and Pollney, D. Injection of melt sheet into impact crater footwall: implications from offset dykes of the Sudbury Igneous Complex, Canada. *GAC-MAC-SGA Annual National Meeting*. Laurentian University, Sudbury. Canada. May 2023.

Research Papers Presented at Academic/Scientific Conferences (Non-peer-reviewed Proceedings)

Atemkeng, M.T.

Hamlomo, S., Atemkeng, M.T., Baxter, J., Brima, Y. and Nunhokee, C.D. A Systematic Review on Local Low-Rank Approximation in Medical Imaging. *South African Statistical Association 2023*. Southern Sun Elangeni & Maharani Conference Venue, Durban. South Africa. January 2023.

DEPARTMENT OF Music and Musicology



Dr Boundina McConnachie
Head of Department

Introduction

2023 marked a year of excellence in research for the Department of Music and Musicology. In April, we welcomed Sibusiso Njeza, a nationally acclaimed composer and choral conductor, to lead our new Choral Music Programme. He has already made an impact on our Department with the Rhodes University Chamber Choir featuring prominently in future plans.

Sadly, we mourned the loss of two esteemed colleagues, Professor Andrew Tracey, former Director of the International Library of African Music (ILAM) and Honorary Doctorate recipient, Dr Latozi Mpahleni Madosini, both national treasures who have significantly contributed to Rhodes University in a variety of ways. Their impact guides the African Music Programme at Rhodes University which remains the largest in South Africa.

As part of our vision for inclusion, we initiated the Music Students' Representative Organisation (MSRO), giving students a platform to engage with and promote the activities at the Department. Throughout the year, we saw several high-quality performances by both staff and Postgraduate students, showcasing their talents and dedication to the musical arts in South Africa. We are especially proud of contribution towards the musical life of Makhanda through the Makana Community Orchestra, for which we received Mzantsi Philharmonic funding. Performances at the National Arts Festival as well as the Guy Butler Theatre included community musicians, music lecturers and students, Rhodes University lecturers and students as well schoolteachers and learners from local institutions. This initiative truly demonstrates the power of community music and we look forward to continuing this fruitful collaboration.

Postgraduates / Graduations

The Music Department celebrated the graduations of two (2) PhDs in October and six (6) Master's students, with two (2) graduating in March and four (4) in October. The total Postgraduate cohort in 2023 comprised sixteen (16) PhD candidates and fourteen (14) Masters students. Among the



Uhadi performance at the Rhodes Theatre.
Photo: Boudina McConnachie.

As part of our vision for inclusion, we initiated the Music Students' Representative Organisation (MSRO), giving students a platform to engage with, and promote the activities at the Department.

notable graduates was former ILAM lecturer **Joseph Makanza** and Departmental Librarian **Ilana Chirombo**, who both earned Masters degrees, and **Natalie Rungen**, a nationally acclaimed Jazz singer, who was awarded a PhD in October 2023.

Thandeka Mfinyongo's performances around the country have showcased traditional African music at its best, while **Alida van der Walt**, in collaboration with **Dominic Daula**, intrigued audiences with a memorable performance as part of her Masters degree. PhD candidate **Garreth Robertson**, Masters students **Devon Florence** and **Bonelela Mavuso** as well as **Paul Hamner**, hosted as a Postdoctoral Fellow, made significant contributions to our academic performance environment.

Distinguished Visitors / International Visits

Associate Professor Catherine Foxcroft delivered a series of piano masterclasses and performances at the Alabama School of Fine Arts (ASFA) in Birmingham, Alabama, USA. Concurrently, Paul Hamner performed in Luzern, Switzerland, in a concert titled *A Year in 12 Reflections*, a collaboration between Michael Schneider and himself. Dr Boudina McConnachie and Elijah Madiba were invited to participate in a three-week residency at the University of Cape Coast (UCC) in Ghana in July and August 2023, where they focused on African Music Pedagogy. Following the residency, they presented their work at the Pan African Society for Musical Arts Education (PASMAE) conference. The formalised collaborations with UCC are an integral component of the ongoing student exchange programme with Ghana.

Significant Research Aligned Events

We are pleased to announce that Jonathan Hughes, under the supervision of Dominic Daula, won the *Journal of the Musical Arts in Africa's* Essay Competition for 2023. His work on organ music in Makhanda is a vital contribution to historical music studies in South Africa. Boudina McConnachie, in collaboration with Dr Dylan McGarry, presented the award-winning exhibition *Our Ocean is Sacred, You Can't Mine Heaven* at the National Arts Festival and the Zeitz Gallery in Cape Town. This interdisciplinary work, funded by the One Ocean Hub, is gaining significant recognition. Another exhibition by Dr Boudina McConnachie, *Harmony of Science and Art*, part of the NRF *Indigenous Marine Innovations for Sustainable Environments and Economies* (IMIsEE) project in collaboration with the South African Institute for Aquatic Biodiversity (SAIAB), premiered in Makhanda and is set to tour globally in 2024.

The Department hosted the Indigenous Music Technologies conference at Rhodes University, funded by the National Institute for the Humanities and Social Sciences (NIHSS). Led by William Fourie and colleagues from the University of the Witwatersrand and North-West University, the event saw participation from twenty (20) delegates across Africa and Europe. The Rhodes University Music Colloquium, convened by Dr William Fourie, continued to foster research exchange. Seven (7) leading



Catherine Foxcroft during research. Photo: Department of Music and Musicology.

scholars, including Professor Tamara Levitz (UCLA), Professor Louise Meintjes (Duke University), and Professor Johan Buis (Wheaton College), contributed to this series. Professor Buis's participation included a week-long visit funded by the Carnegie Foundation.

Thirteen (13) staff and Postgraduate students presented at the Seventeenth Annual Conference of the South African Society for Research in Music (SASRIM) at the University of the Western Cape, in August 2023 where William Fourie served as Chair of the conference programme committee. We are proud to report that we represented the second largest cohort in the country, marking the Department's growing prominence in music research.

Our continued collaboration with the International Library of African Music (ILAM) contributes greatly towards the vision of the revaluation of the African Musical Arts on our continent and we are grateful for the opportunities to continue with this important goal. As the Department attracts more performance and research attention we look forward to continued excellence in the coming year.



Bruce Brown with Dr Natalie Rungan.
Photo: Department of Music and Musicology.

Music and Musicology

Concerts, Exhibitions, Performances, Workshops, Events

Daula, D.H.H.

Daula, D.H.H. Performer. Harpsichord Recital. Programme: Johann Sebastian Bach - French Suite in B minor, BWV 814; Henry Purcell - Suite in G minor, Z 661; Clare Loveday - 'Harpsichord' (2019, commissioned by Dominic Daula) - world premiere performance; Johann Sebastian Bach - Toccata in D major, BWV 912; Alan Bush - Suite 'On Lawn and Green', opus 54 (1960); Johann Jakob Froberger: Fantasia sopra ut re mi fa sol la, FbWV 201. Total duration: 1 hour. URL to recital: <https://youtu.be/LkLeyxeTe7Q?si=jbsDd9SbMEXRAZIS>. Bowed Electrons @ UCT 2023 - Day 2 Lunchtime Concert by Dominic Daula (harpsichord). Strubenholm Recital Room, South African College of Music, University of Cape Town, Cape Town. South Africa. 3 September 2023.

Daula, D.H.H. and Van Der Walt, A.

Daula, D.H.H., Van Der Walt, A. and Mostert, C. Collaborative pianist. un(BECOMING), a semi-staged recital. Alida van der Walt (mezzo soprano), Dominic Daula (piano), and Carla Mostert (direction). Programme: Barbara Strozzi - 'Spesso per entro al petto'; Louise Reichardt: 'Vanne felice rio'; Robert Schumann: 'Frauenliebe-und Leben', opus 42; Margaret Bonds: 'Women Have Loved Before As I Love Now' and 'What Lips My Lips Have Kissed' from 'Six Songs on Poems by Edna St Vincent Millay'; Madeleine Dring: 'Song of a Nightclub Proprietress' and 'Business Girls' from 'Five Betjeman Songs'; Kurt Weill: Youkali; Arnold van Wyk: Vaalvalk. Total duration: 50 minutes. un(BECOMING). Beethoven Room, Beethoven House, Department of Music and Musicology, Rhodes University, Makhanda. South Africa. 29 September 2023.

Fourie, W.E.

Fourie, W.E. Workshop leader. SASRIM Preparing Your Conference Paper Workshop. *SASRIM Preparing Your Conference Paper Workshop*. University of the Western Cape, Cape Town. South Africa. 23 August 2023.

Fourie, W.E., Erasmus, A. and Venter, C. Workshop leader. *SASRIM-NIHSS Postgraduate Article Writing Workshop*. Rhodes University, Makhanda. South Africa. 23 - 25 November 2023.

Fourie, W.E. Programme Chair. *17th Annual Conference of the South African Society for Research in Music*. University of the Western Cape, Cape Town. South Africa. 24 - 27 August 2023.

Fourie, W.E. Recording Producer. *2023 South African Strings Convention*. Nelson Mandela University, Gqeberha. South Africa. 17 - 20 March 2023.

Fourie, W.E., Ncanywa, S. and Mfinyongo, T.L.

Fourie, W.E., Madiba, E.M., Stacey, C., Molikeng, M., Ncanywa, S. and Mfinyongo, T.L. Conference Organiser. *Indigenous Music Technologies Conference*. Rhodes University, Makhanda. South Africa. 3 - 5 February 2023.

Foxcroft, C.

Foxcroft, C. Solo recital and lecture. *Compositions by B. Ndodana-Breen (Isiko Umdlalo Emlanjeni), A. Johnson (2 Jazz impromptus), Schubert (Impromptu Op 90 No 3), Liszt (Isoldens Liebestod)*. Alabama School of Fine Art, Birmingham, Alabama. USA. 5 January 2023.

Foxcroft, C. Chamber recital piano quintets. Modern Musings: Contemporary Chamber Music by Barber, Shostakovich and Ndodana-Breen. *Catherine Foxcroft and the Odeion String Quartet (OSQ)*. RU Concert Series. Beethoven Room, Makhanda. South Africa. 27 November 2023.

Hanmer, P.D.

Hanmer, P.D. Solo pianist. Paul Hanmer Solo Piano. *National Jazz Festival*. DSG Hall, Makhanda. South Africa. 27 June 2023.

Hanmer, P.D. Jazz collaboration. Natalie Rungan Jazz Collaborative Performance. *National Jazz Festival*. DSG Hall, Makhanda. South Africa. 30 June 2023.

Hanmer, P.D. Piano collaboration. Everybody is a Bridge. *Anton Kruger and Paul Hanmer*. Beethoven Room, Makhanda. South Africa. 13 July 2023.

Hanmer, P.D. Soloist. *Solo piano recital in Beethoven Room*. Beethoven Room, Makhanda. South Africa. 18 May 2023.

Hanmer, P.D. Chamber performance. Brunchkonzert. *Chamber recital with Robert Pickup (clarinet), Mrubata McCoy (saxophone), Paul Hanmer (piano) and string quartet*. Spiegelsaal Opernhaus, Zurich. Switzerland. 15 September 2023.

McConnachie, B.

McConnachie, B. Podcast. Africa Music Activists - Madosini, a collaborative honouring. *National Arts Festival*. Monument, Makhanda. South Africa. 23 June - 5 July 2023.

McGarry, D.K., McConnachie, B., Kaplan, L.J. and Howse, M. Exhibition. Our Ocean is Sacred, you Can't Mine Heaven. *EITZ Gallery*. Burg Street, Cape Town. South Africa. 1 August - 20 November 2023.

McConnachie, B. and McGarry, D.K. Development and curation. Our Ocean is Sacred, You can't Mine Heaven. *National Arts Festival*. Rhodes Theatre Red Room, Makhanda. South Africa. 23 June - 15 July 2023.



Vuyelwa Moyo, Lee Watkins, Thandeka Mfinyongo and Boudina McConnachie presenting at SASRIM.

Photo: William Fourie.



Ilana Chirombo and Boudina McConnachie at the March Graduation. Photo: Gareth Robertson.



Staff and Postgraduate concert, *from left to right*: William Fourie, Lieva Starker, Dominic Daula, Garreth Robertson, Ilana Chirombo, Boudina McConnachie, Tshegofatso Makube and Devon Florence.

Photo: Department of Music and Musicology.

McConnachie, B. Workshop presentation. UP Music Festival. *Why do we teach music?* Department of Music, University of Pretoria, Pretoria. South Africa. 21 - 25 August 2023.

McConnachie, B. and Mfinyongo, T.L.

McConnachie, B. and Mfinyongo, T.L. Workshop. African strings - an introduction. *South African Strings Convention*. Nelson Mandela University, Gqeberha. South Africa. 17 - 20 March 2023.

McConnachie, B. and Moyo, V.O.

McConnachie, B., Madiba, E.M., Mathebula, P.N., Matyobeni, T., Ngqezana, K. and Moyo, V.O. Principal investigator and curator. *Indigenous Marine Innovations for Sustainable Environments and Economies (IMiSEE): A Sound Postcard Exhibition*. Sound Postcard Exhibition. AMAWI Literary Museum, Makhanda. South Africa. 24 November - 6 December 2023.

Mfinyongo, T.

Mfinyongo, T. Collaboration. *Resonance* presented by NewMusicSA in Collaboration with NMU Department of Music and Performing Arts and South African Strings Foundation. 24 January 2023, Gqeberha, South Africa.

Mfinyongo, T. *Four Days Seven Concerts*, Resonance - ensemble with Dizu Plaatjies, Cara Stacey, David, Jan Hendrik Harley and Marichen Meyer - NMU Auditorium, Gqeberha, South Africa.

Mfinyongo, T. Collaboration. *Umngqungqo Orchestral Experience* presented by Dumza Maswana. BoardWalk ICC. Gqeberha, South Africa. 15 April 2023.

Mfinyongo, T. Solo performance. *Madosini Exhibition National Arts Festival*. Makhanda. South Africa. 28 June 2023.

Mfinyongo, T. Concert Performance. *Ndim Lo an Intimate Session with Thandeka Mfinyongo* at ArtsCape, Cape Town. South Africa. 31 August 2023.

Mfinyongo, T. Concert Performance. *Folklore Festival*. National School of the Arts, Johannesburg. South Africa. 16 September 2023.

Mfinyongo, T. String ensemble. *South African Strings Foundation in Collaboration with SA Composers' Symposium*. Stellenbosch University, Stellenbosch. South Africa. 22 September 2023.

Mfinyongo, T. Concert Performance. *Oluzayo Festival- (with Ancient Voice)*. Untitled Basement, Johannesburg. South Africa. 24 November 2023.

Robertson, G.D.

Robertson, G.D. Soloist. Emil Hartmann Piano Concerto Op 47. *Symphony Spectacular Makhanda Performance*. Settlers Monument, Makhanda. South Africa. 14 October 2023.

Robertson, G.D. Piano Concerto. Emil Hartmann Piano Concerto Op 47. *Symphony Spectacular Gqeberha Performance*. Summerwood Primary, Gqeberha. South Africa. 15 October 2023.

Robertson, G.D. Chamber Recital. Echoes of Mozart: Piano quintets by Hummel and Farrenc. *Makhanda Music Society Chamber recital*. Beethoven Room, Makhanda. South Africa. 8 December 2023.

Robertson, G.D. and Florence, D.S.

Robertson, G.D. and Florence, D.S. Duo collaboration. Letters from Clara. *Cradock Literary Festival*. Cradock Hotel, Cradock. South Africa. 16 June 2023.

Distinguished Visitors

Buis, J. and Theodore, J.

Professor J Buis and Mr J Theodore. Wheaton College, Illinois and University of South Africa Directorate Music, Wheaton and Pretoria, USA and South Africa. *Apartheid in Search of Black Musical Dignity: 'Unknown' Legacy of Milton Oersen (1918-2016)*. Lecture recital, 3 May 2023. Beethoven Room, Beethoven House, Department of Music and Musicology, Rhodes University. Session introduced and chaired by Dominic Daula. March 2023.

Foxcroft, C.

Foxcroft, C. SASMT, Pretoria, South Africa. *Juror SASMT National Ensemble Competition*. September 2023.

Foxcroft, C. UNISA, Pretoria, South Africa. *Jury member UNISA International Piano Competition (screening)*. July 2023.

Hanmer, P.D.

Dr P.D. Hanmer. Rhodes University, Makhanda, South Africa. *Postdoc fellowship*. March 2023.

Petersen, A.B.

Dr A.B. Petersen. MASARA, North-West University, Potchefstroom, South Africa. *African Pianism. Lecture, 8 and 15 March 2023.* Session introduced and chaired by Dominic Daula. Total duration: 90 minutes. March 2023. Beethoven Room, Beethoven House, Department of Music and Musicology, Rhodes University.

Robertson, G.D.

Robertson, G.D. Rhodes University, Queenstown, South Africa. *Adjudicator Queenstown Eisteddfod.* August 2023.

International Visits

Foxcroft, C.

Foxcroft, C. Alabama School of Fine Arts (ASFA), Birmingham, Alabama, USA. *Piano Masterclasses, recital and lecture.* 6 - 8 January 2023.

Hanmer, P.D.

Hanmer, P.D. Musikhochschule Luzern, Luzern, Switzerland. *A Year in 12 Reflections by Michael Schneider and Paul Hanmer.* 21 September 2023.

McConnachie, B.

McConnachie, B. University of Cape Coast, Cape Coast, Ghana. *African Music Pedagogy.* 19 - 27 July 2023.

Peer Reviewed Non-Subsidy-Earning Journal Research Publications

McConnachie, B.

Porri, F., McConnachie, B., Van Der Walt, K.A., Wynberg, R. and Patrick, P. (2023) Eco-creative nature-based solutions to transform urban coastlines, local coastal communities and enhance biodiversity through the lens of scientific and Indigenous knowledge. *Cambridge Prisms: Coastal Futures.* 1 (17). p.1-14.

Peer Reviewed Subsidy-Earning Journal Research Publications

Daula, D.H.H.

Daula, D.H.H. (2023) Prismatic: Contemporary South African Piano Music. *Journal of the Musical Arts in Africa.* 20 (1). p.141-144.

Fourie, W.E.

Fourie, W.E. (2023) Lise Morrison - Lise Morrison, *No grief without joy.* Sawyer Editions, bandcamp. *TEMPO.* 78 (307). p.90-91.

Fourie, W.E. (2023) Spectral Resistance in Andile Khumalo's *Bells Die Out.* *Perspectives of New Music.* 59 (2). p.147-171.

Hughes, J.E.

Hughes, J.E. (2023) Addressing the pipework in South Africa's oldest playable organ: a materialist-political history. *Journal of the Musical Arts in Africa.* 20 (2023). p.1-13.

McConnachie, B.

McConnachie, B. (2023) Copyright complications and consequences at the International Library of African Music. *Rhodes University: A case study. SAMUS.* 41-42 (2021/2022). p.183-197.

Research Papers Presented at Academic/Scientific Conferences (Non-peer-reviewed Proceedings)

Daula, D.H.H.

Daula, D.H.H. 'Africa is My Name': Alan Bush's *Interest in the Musical and Political Landscapes of Southern Africa.* *Seventeenth Annual Congress of the South African Society for Research in Music.* Greatmore Humanities Hub - Centre for Humanities Research, Cape Town. South Africa. August 2023.

Fourie, W.E.

Fourie, W.E. Keynote address: Sound's Alchemy. *2023 Bowed Electrons Symposium.* University of Cape Town, Cape Town. South Africa. September 2023.

Fourie, W.E. Sound's Alchemy: Materiality, Traces, and the Archive. *17th Annual Conference of the South African Society for Research in Music.* University of the Western Cape, Cape Town. South Africa. August 2023.

Fourie, W.E. Indigenous Music Technologies: Opening Remarks. *Indigenous Music Technologies Conference.* Rhodes University, Makhanda. South Africa. February 2023.

Fourie, W.E. Sound's Anti-Archive. *Inaudible Past, August Workshop.* The Edge, Hogsback. South Africa. August 2023.

Fourie, W.E., McConnachie, B. and Mfinyongo, T.L.

Fourie, W.E., McConnachie, B., Mfinyongo, T.L., Stacey, C. and Bester, D. Panel Discussion: *Journal of Southern African Strings. 2023 South African Strings Convention.* Nelson Mandela University, Gqeberha. South Africa. March 2023.

Fourie, W.E., Mfinyongo, T.L. and Ncanywa, S.

Fourie, W.E., Stacey, C., Madiba, E.M., Molikeng, M., Mfinyongo, T.L. and Ncanywa, S. Indigenous Music Technologies: Where to next? *Indigenous Music Technologies Conference.* Rhodes University, Makhanda. South Africa. February 2023.

McConnachie, B.

McConnachie, B. Linking the Arts to Sustainable Environmental Research. *Amazwi Literature Heritage Ecology Conference.* AMAWI Literary Museum, Makhanda. South Africa. March 2023.

McConnachie, B. Linking community and science through sound - Mapping audio postcards for deeper understanding. *South African Society for Research in Music.* Centre for Humanities Research, University of the Western Cape, Cape Town. South Africa. August 2023.

McConnachie, B. African approaches to sonic pedagogy. *Pan African Society for Musical Arts Education.* Cape Coast University, Cape Coast. Ghana. July 2023.

McConnachie, B. and Porri, F. From Global challenges to local solutions: how FAIR data, transdisciplinarity and innovation are sustainably shaping the marine research, management, communities and narratives of South Africa. *Sustainable Research and Innovation Congress.* Nelson Mandela University, Gqeberha. South Africa. June 2023.

McConnachie, B. Digital Humanities Panel Discussion. *DHASA-Ignite.* Nelson Mandela University, Gqeberha. South Africa. November 2023.

McConnachie, B. Hearing the past with our bodies to create a future where we listen: Using the archive as a pedagogical resource to redress musical value and agency of marginalised heritages. *African Humanities Association.* University of Cape Town, Cape Town. South Africa. November 2023.

McConnachie, B., Mfinyongo, T.L. and Moyo, V.O.

McConnachie, B., Watkins, L.W., Mfinyongo, T.L. and Moyo, V.O. Archives then, now and in the future: Looking at the development and trajectory of archival research and practice at the International Library of African Music (ILAM) in Makhanda, South Africa. *South African Society for Research in Music.* Centre for Humanities Research, University of the Western Cape, Cape Town. South Africa. August 2023.

RHODES UNIVERSITY

International Library of African Music (ILAM)



Dr Lee Watkins

Director

Introduction

In the past year, the International Library of African Music (ILAM) has continued on its journey in being the most advanced music archive on the continent. It is advanced in that it is the only music archive on the continent that is engaged in digitisation, research projects, publications, teaching, and the supervision of Postgraduate students in and beyond the borders of the university, the town and South Africa in general.

It is also advanced in that it follows a distinct trajectory which is influenced by the political in as far as it follows 'decolonial' or 'postcolonial' archival practices. We are continuing with supporting digitisation efforts such as the one in Dar es Salaam conducted by our research partner, John Kitime; community based archiving projects such as the one in Keiskammahoek; the jazz heritage of the Eastern Cape project which has now drawn to a close; and research efforts such as the ones on the digitised heritages of the Eastern Cape, Limpopo and in the Northern Cape. Students, research partners in the community, and the two staff members of ILAM manage to sustain these efforts at ILAM.

We also bid farewell to Andrew Tracey (5 May 1936 - 12 January 2024). The Tracey family is synonymous with the name and institution called the International Library of African Music. His departure is a great loss to the music scholarship of the continent as he had a tremendous amount of knowledge about the peoples of Africa, their languages and their music. We hope that the many terabytes of recordings of his performances and lectures will continue to inform and inspire all generations of African music students and enthusiasts.

Postgraduates / Graduations

Qhawe Giyose (MMus)

Nontuthu Mtsini (MMus)



Photo: Chris Marais.

Distinguished Visitors / International Visits

Marcus Coester, University of Bayreuth, June 2023.

Lee Watkins, ERASMUS + visiting lecturer at the New University of Lisbon, April 2023.

Significant Research Aligned Events

ILAM is a member of the Rhodes African Studies Centre (RASC) at Rhodes University. RASC is funded by the Africa Multiple Cluster of Excellence at Bayreuth University. Since 2020, ILAM has been engaged in two projects supported by RASC. These are the "Sounding Africa on the Indian Ocean Littoral and in the Southwestern Indian Ocean", and "Beyond Digital Return." ILAM was also a member of a research project called "Inaudible Pasts", funded by the University of Basel in Switzerland. In the past year, we initiated a new project which is funded by Carleton University in Canada. The title of this project is "Sounding Indigenous in South Africa: Music and Performance Heritage in Khoesan Revival."

In many African countries such as Tanzania and Kenya, there is a resistance to the idea of digitisation. The three fully fledged music archives on the continent: The International Library of African Music, the J.H. Kwabena Nketia Archives in Accra, and the Makerere University Klaus Wachsmann Audio-visual Music Archive (MAKWMA) in Kampala, have made strides in digitising their collections. Unfortunately, this is not true for the vast majority of collections on the continent. Many collections are

in a precarious state. After a meeting with the Ministry of Culture in Dar es Salaam I learnt that it was resistant to the idea of digitisation - at first they expressed a desire for digitisation but they then declined the offer when it became available - I deemed it necessary to work with those who are interested in doing the digitisation instead of merely just talking about it. John Kitime, a musician and radio broadcaster in Dar es Salaam, has stepped up as a significant partner who is collecting recordings far and wide in Tanzania and digitising them. ILAM has provided support by way of logistics and equipment. The plan is to have the digitised items in his collection linked up with the ILAM catalogue once they are catalogued. The reader may want to follow his blog: <https://tanzaniamusicarchive.blogspot.com/2023/11/day-one-in-arusha.html?m=1>

In the "Beyond Digital Return Project", the second team meeting was held in July 2023 at the University of Ghana in Legon. Our partners from Moi University in Kenya, the University of Ghana and one of the team leaders from Bayreuth University, attended the workshop. Among participants there were five (5) PhD candidates: one (1) from Rhodes University, one (1) from Moi University and three (3) from the University of Ghana. The team members discussed their research projects and plans. We attended a workshop dealing with UNESCO and intangible heritage, and a presentation by a group of women musicians and their contribution to digitised heritages in Ghana. Following the workshop, team leaders and a student participated in a panel on *Beyond the Digital Return* at the conference of the International Council of Traditional Music and Dance-Africa in

July 2023. Another aspect to this project funded by RASC was for ILAM to work with Egazini, a community organisation for the arts in Joza, Makhanda. Hugh Tracey's recordings of amaXhosa music made in the 1950s were given to local DJs, slam poets and other artists to reinterpret according to their own interests. There were numerous meetings to discuss the requirements of the project, a few rehearsals and a performance on 24 June 2023. The collaboration was successful as these artists created new, exciting musics which appeal to young and old.

The research project on the jazz heritage of the Eastern Cape has also drawn to a close. The Masters degree student's thesis has been examined. She will submit the revised thesis shortly, after which she is expected to graduate. The PhD candidate is still in the process of writing up her thesis.

The project dealing with cataloguing the digitised recordings of Keiskammahoek has also drawn to a close. As far as we are aware, this is the first collection of recordings available with metadata in both English and isiXhosa. The next step is to present the collection to the communities in Keiskammahoek. A hard drive of the catalogued recordings was given to Thabisa Mhlahlo who is our main research partner in Keiskammahoek.

The "Sounding Indigenous in South Africa: Music and Performance Heritage in Khoesan Revival" project commenced in the second half of 2023. Partners in this project include Lee Watkins, Sharon Gabie, members of South African Nama Development Association (SANDEVA), notably its chairperson, James Mapanka, and Lyndsey Copeland, from Carleton University and its Institute for African Studies. This project investigates and collaboratively archives the music and performance practices of people in South Africa's Northern Cape region who identify as Khoesan and are known as the "first people". Khoesan activists have made considerable effort in recent decades to revive indigenous practices in South Africa, including languages, cosmological beliefs, song repertoires, and performance heritage. This project asks how heritage performance-in particular, dances and songlines - function in the contemporary imagination and telling of indigenous Khoesan social history in South Africa. To date, we have had two workshops and a research trip to the Northern Cape. In the first workshop in November 2023 we discussed a way forward for the project.

The research sites are in the Northern Cape in small towns such as Riemvasmaak, Springbok and Kakamas. In the next phase we will be conducting fieldwork in the Eastern Cape. Lyndsey Copeland is the key researcher. The current cycle of this project is from 2023-2025.

RHODES UNIVERSITY

International Library of African Music

Research Papers Presented at Academic/Scientific Conferences (Non-peer-reviewed Proceedings)

Conferences

The International Library of African Music and its role in the preservation and propagation of the old and the new in South African musical performance. November 2023, University of Lagos, Nigeria.

Archives Then, Now and in the Future: Looking at the Development and Trajectory of Archival Research and Practice at the International Library of African Music. August 2023, UWC, Cape Town.

FACULTY OF Pharmacy



Professor Sandile Khamanga
Dean of Faculty

Introduction

I am excited to provide this Annual Report on research in the Faculty of Pharmacy in which the extraordinary research and scholarly activities conducted by the students and staff of the Faculty is showcased. The Faculty of Pharmacy is committed to ensuring excellence in research. Our reputation as a solid Faculty in terms of pharmacy and related research continues to grow and is best exemplified by the high-quality staff and researchers that want to join our community. Our research enterprise is an important reason for this success. It continues to build on our reputation for educating, training and developing competent and exceptional pharmacists and pharmaceutical scientists at Postgraduate level for South Africa and the rest of the world.

While only the highlights are included herein, it is also recognised that many other individual accomplishments were realised this past year. It is fitting that this report begins with a description of the importance of the refurbishment of the Chemical and Pharmaceutical Sciences building that is currently taking place.

The Faculty celebrated the talents and achievements of Postgraduates during our Postgraduate research day. The event was full of excitement and discovery, as these young pharmaceutical scientists presented their findings. They each delivered 10-minute presentations followed by a 5-minute question/answer session.

The Faculty actively monitors the different risks which are included in the Faculty Risk Register, which is a standing item on the research agenda of the Faculty. The major risk identified in 2023 related largely to Postgraduate student funding. Lastly, the relocation of laboratories during the refurbishment stage has had a direct and negative impact on research activities.

Comparatively, the Faculty continues to attract a larger contingent of international students, offering the faculty the academic rigor associated with a diverse student population.



Faculty of Pharmacy Postgraduate students and staff who participated in the 2023 APSSA conference at University of KwaZulu-Natal (UKZN).
Photo: Faculty of Pharmacy.

I could not be prouder of all our staff who demonstrate their level of commitment, student service, work ethic, responsibility, and teamwork every day. These values are of utmost importance to our success as we strive for continuous improvement. We continue to strive to create a culture in the Faculty of Pharmacy where we support and listen to each other and work together to solve challenges, encourage diversity, and celebrate our individual and collective achievements.

Postgraduates / Graduations

The Faculty of Pharmacy offers Postgraduate training primarily in Pharmaceutics, Pharmacology, Pharmaceutical Chemistry and Pharmacy Practice. Students pursue thesis-based MSc, MPharm and PhD degrees across a range of research areas such as drug discovery, paediatric formulation, biopharmaceutics, taste masking, screening for novel synthetic or natural compounds as potential agents for diabetes mellitus, design of new (chemical) bioactive compounds, and Pharmacy Practice related research. The Faculty continues to develop Postgraduate opportunities that emphasize multidisciplinary, collaboration, and engagement as reflected in published manuscripts. Such research is important, and students use specialized technology, skilled experts to develop pharmaceutical dosage forms, where there is adequate solubility and stability with the target active pharmaceutical ingredient. The statistics for 2023 are listed in the table to follow.

	Completed (graduated in 2023)	Active (busy with Postgraduate studies)
PhD	0	11
Masters	7	34

Distinguished Visitors / International Visits

In 2023 the Faculty of Pharmacy academics, students and alumni were actively involved in initiating in both practice and research. We saw the visit by Professor Meen Chherti, an Adjunct Professor at Queensland University of Technology who delivered a keynote lecture at the 2023 TIEMS Conference.

Mr Harald Drager, the President of the International Emergency Management Society and Professor Agoston Restas from the Institute of Disaster Management, National University of Public Service, Budapest, Hungary, were hosted by Professor Roman Tandlich. Several academic staff and Postgraduate students delivered presentations at the same conference.

Professor Andy Gray visited the Faculty in 2023. He is a Visiting Fellow of the Faculty, and gave several lectures to our final year students, held meetings with academic staff, and presented a Continuing Professional Development (CPD) event for pharmacists in Makhanda and surrounding areas.

Significant Research Aligned Events

We bade farewell to Dr Harold Walsh who retired in December 2023 and Dr Pedzi Makoni who resigned at the end of the year. We wish him all success in his continuing career. In 2023 academics and Postgraduates worked on over forty (40) research projects. The Academy of Pharmaceutical Sciences in South Africa (APSSA) held their annual conference at Zimbali, KZN which was hosted by the University of KwaZulu-Natal.

Professor Sandile Khamanga was invited to Judge the global grand finale of the International Competition for Young Researcher in the field of Dissolution Sciences, Dissolution Research Presentations International in September. The event was organised by the Society of Pharmaceutical Dissolution Science in collaboration with American Association of Pharmaceutical Scientists (AAPS). The theme of the conference was "Riding the Waves of Change". The academic programme was very successful with a number of posters, young scientist and podium presentations.

Dr Ntethelelo Sibiya, Dr Pedzisai Makoni, Professor Sandile Khamanga, Professor Setshaba Khanye and Postgraduates were delegates from the Faculty that presented their research at the 2023 APSSA conference. Professor Khamanga delivered a plenary presentation titled "Pharmacy school think tank: Collaborative approaches to resolving chronic staff shortages" at this meeting.

The Pharmacology division hosted a successful 56th Annual SASBCP conference, on the 24 - 27 August 2023 at Rhodes University. **Professor Rob Walker** delivered a plenary lecture at the conference that was convened by Professor Mmamosholeli Mothibe.

Professor Khanye attended the 16th Frank Warren (Organic Chemistry) Conference in Limpopo, Polokwane, in December 2023, where he presented a paper on molecular hybridisation in the design of biologically active compounds.

Professor Walker also presented a plenary lecture and participated in a panel discussion at the TIEMS Hybrid Conference organised by Professor Tandlich which was held at Stenden South Africa in Port Alfred. The TIEMS Hybrid Conference was organised by Professor Tandlich.



Professor SM Khamanga presenting at the 2023 APSSA Conference which was hosted by the University of KwaZulu-Natal (UKZN).

Photo: Faculty of Pharmacy.



Faculty of Pharmacy Postgraduate students and staff who participated in the 56th Annual SASBCP conference at Rhodes University.

Photo: Faculty of Pharmacy.

Books/Chapters/Monographs

Khamanga, S.M. and Makoni, P.A.

Melamane, S., Mandava, T., Manda, A., Luphade, N., **Khamanga, S.M., Makoni, P.A.**, Demana, P.H., Matafwali, S.K. and Witika, B. (2023) Artificial neural network-based inference of drug-target interactions. In: Rai, M., Khan, S. and Belgamwar, A. (eds.). *Nanotechnology Principles in Drug Targeting and Diagnosis*. Amsterdam, The Netherlands: Elsevier B.V. p.35-62. ISBN: 9780323917636.

Makoni, P.A.

Witika, B., Matafwali, S.K. and **Makoni, P.A.** (2023) Macrophage-mimetic nanomedicines for the treatment of disease. In: Rai, M., Khan, S. and Belgamwar, A. (eds.). *Nanotechnology Principles in Drug Targeting and Diagnosis*. Amsterdam, The Netherlands: Elsevier B.V. p.63-89. ISBN: 9780323917636.

Peer Reviewed Non-Subsidy-Earning Journal Research Publications

Srinivas, S.C.

Mardourian, M., Lyons, H., Brunner, J.R., Edwards, M.K., Lennox, A., Mahadevaiah, S., **Srinivas, S.C.**, Prudhvi Raj, S., Pradhan, A. and Kalyatanda, G. (2023) Prevalence of antimicrobial resistance in urine, blood, and wound pathogens among rural patients in Karnataka, India. *Antimicrobial Stewardship & Healthcare Epidemiology*. 3 (1). p.1-11.

Peer Reviewed Subsidy-Earning Journal Research Publications

Arineitwe, C., Khanye, S.D. and Sibiya, N.H.

Arineitwe, C., Oderinlo, O., Tukulula, M., **Khanye, S.D.**, Khathi, A. and **Sibiya, N.H.** (2023) Discovery of Novel Thiazolidinedione-Derivatives with Multi-Modal Antidiabetic Activities *In Vitro* and *In Silico*. *International Journal of Molecular Sciences*. 2023 (24). p.1-18.

Ayodele, O.O., Khanye, S.D., Mothibe, M.E. and Sibiya, N.H.

Ayodele, O.O., Khanye, S.D., Mothibe, M.E. and Sibiya, N.H. (2023) Fluroquinolone-induced glycaemic aberrations: Could quinolones be repurposed to serve as new antidiabetic agents? *Current Reviews in Clinical and Experimental Pharmacology*. 18 (1). p.12-21.

Bagrath, P., Agbor Ambang, O., Walsh, H.A., Chapman, E.C. and Tandlich, R.

Bagrath, P., Agbor Ambang, O., Walsh, H.A., Chapman, E.C. and Tandlich, R. (2023) Challenges and cooperation in emergency and disaster risk management: The way forward through COVID-19 and beyond. *Journal of Emergency Management*. 21 (8). p.1-12.

Bavuma, B. and Tandlich, R.

Bavuma, B., Ngowana, T. and **Tandlich, R.** (2023) Water security and rainwater harvesting at household level in a local municipality in South Africa: quantity calculations and supply implications. *Kosice Security Revue*. 13 (2). p.1-27.

Chapman, E.C.

Chapman, E.C. and **Oosthuizen, R.C.** (2023) The COVID-19 response and accountability in South Africa. *Journal of Emergency Management*. 21 (8). p.1-11.

Chapman, E.D. and Tandlich, R.

Chapman, E.D. and **Tandlich, R.** (2023) Search volumes from an internet search engine as a tool to evaluate the levels and drivers of South African public's interest in exceptional situations and accountability. *Kosice Security Revue*. 13 (2). p.72-100.

Dowse, R.

Dowse, R. (2023) Pharmacy students' opinion of the routine use of pharmaceutical pictograms on a health care train serving rural limited literacy patients. *International Journal of Pharmacy Practice*. 31 (4). p.423-430.



Professor S. Khanye presenting at the 16th Frank Warren (Organic Chemistry) Conference (December 2023) in Limpopo.

Photo: Faculty of Pharmacy.

Dowse, R., Okeyo, S., Sikhondze, S. and Khumalo, N.

Dowse, R., Okeyo, S., Sikhondze, S. and Khumalo, N. (2023) Pharmaceutical indication pictograms for low literacy viewers: Health literacy and comprehension. *Health SA Gesondheid*. 28 (2023). p.1-8.

Fakee, J.

Fakee, J., Bolton, J.J., Le Roes-Hill, M., Durrell, K., Antunes, E. and Beukes, D.R. (2023) Antimicrobial Activity of the Secondary Metabolites Isolated from a South African Red Seaweed, *Laurencia corymbosa*. *Molecules*. 28 (5). p.1-11.

Goosen, E.D.

Deyi, A., Nguembang Fajia, A., **Goosen, E.D.**, Siwe Noundou, X. and **Atemkeng Teufack, M.** (2023) Dataset of Selected Medicinal Plant Species of the Genus *Brachylaena*: A Comparative Application of Deep Learning Models for Plant Leaf Recognition. *Journal of Computer Science*. 19 (11). p.1387-1397.

Zeukang, R.D., Kalinski, J.C.J., Tembeni, B., Goosen, E.D., Tembu, J., Kuate, T.T., Bikobo, D.S.N., Fotsing, M.T., Atchadé, A.d. and Siwe-Noundou, X. (2023) Quinones from *Cordia* species from 1972 to 2023: isolation, structural diversity and pharmacological activities. *Natural Products and Bioprospecting*. 13 (52). p.1-24.

Khanye, S.D.

Hulushe, S.T., Malan, F.P., Hosten, E.C., Akerman, M.P., Lemmerer, A., Khanye, S.D. and Watkins, G.M. (2023) Cation-/Ligand-Induced Solvent-Assisted Transformations of Zn(II) and Cu(II) Complexes Featuring Single-Pocket Multidentate Chelating Members. *Crystal Growth & Design*. 23 (7). p.4836-4854.

Ekerendu, E.E., Okoro, U.C., Eze, C.C., Khanye, S.D., Omeje, K.O., Mishra, N.K. and Ugwu, D.I. (2023) Novel Cholinesterase Inhibitors: Synthesis, *in silico* and *in vitro* Studies. *Asian Journal of Chemistry*. 35 (7). p.1683-1691.

Oderinlo, O., Jordaan, A., Seldon, R., Isaacs, M., Hoppe, H.C., Warner, D.F., Tukulula, M. and Khanye, S.D. (2023) Hydrazone-Tethered 5-(Pyridin-4-yl)-4H-1,2,4-triazole-3-thiol Hybrids: Synthesis, Characterisation, *in silico* ADME Studies, and *in vitro* Antimycobacterial Evaluation and Cytotoxicity. *ChemMedChem*. 18 (6). p.202200572.

Kuretu, A., Arineitwe, C., Mothibe, M.E. and Sibiya, N.H.

Kuretu, A., Arineitwe, C., Ngubane, P., Mothibe, M.E., Khathi, A. and Sibiya, N.H. (2023) Drug-induced mitochondrial toxicity: Risks of developing glucose handling impairments. *Frontiers in Endocrinology*. 14 (2023). p.1-15.

Madondo, R., Tandlich, R. and Shwababa, S.

Madondo, R., Tandlich, R., Stoch, E.T., Restas, A. and Shwababa, S. (2023) Quantitative and qualitative data in disaster risk management of fires: a case study from south Africa at various geographical levels. *Geographia Technica*. 18 (2). p.14-39.

Mphahlele, K.S., Ngqwala, N., Agbor Ambang, O., Srinivas, S.C. and Tandlich, R.

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TIEMS Hybrid Conference organised by Professor Tandlich and hosted at Stenden South Africa in Port Alfred. Standing on the far left is Professor Chherti and next to him is Mr Drager.

Photo: Faculty of Pharmacy.

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Ayodele, O.O., Khanye, S.D. and Sibiya, N.H.

Ayodele, O.O., Khanye, S.D. and Sibiya, N.H. Exploring quinolone-chalcone hybrids on selected pharmacological targets for diabetes *in vitro*. *The Academy of Pharmaceutical Sciences of South Africa*. The Capital of Zimbali, Durban. South Africa. August 2023.

Chiwundura, M., Khanye, S.D., Makoni, P.A. and Sibiya, N.H.

Chiwundura, M., Khanye, S.D., Makoni, P.A. and Sibiya, N.H. The effect of Schiff Base Vanadium Complexes on Glucose Uptake in InsulinTarget Cells. *South African Society of Basic and Clinical Pharmacology*. Rhodes University, Makhanda. South Africa. August 2023.

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Katshaza, O.S.H., Khanye, S.D. and Sibiya, N.H.

Katshaza, O.S.H., Khanye, S.D. and Sibiya, N.H. Fluoroquinolone-induced glucose uptake in skeletal and hepatic cell lines *in vitro*. *South African Society of Basic and Clinical Pharmacology*. Rhodes University, Makhanda. South Africa. January 2023.

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Nzuza, B.W., Khamanga, S.M. and Walker, R.B.

Nzuza, B.W., Khamanga, S.M. and Walker, R.B. Formulation, evaluation and comparison of commercially available shampoos. *The 42nd Annual Congress of the Academy of Pharmaceutical Sciences*. Capital Zimbali Resort, Durban. South Africa. September 2023.

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Rukweza, K.G. and Khanye, S.D.

Rukweza, K.G. and Khanye, S.D. Quinolone-Pyrazinamide Derivatives: Synthesis, Characterisation, *in silico* ADME analysis and *in vitro* biological evaluation against Mycobacterium tuberculosis. *The 56th Annual Conference of the South African Society for Basic and Clinical Pharmacology*. Rhodes University, Makhanda. South Africa. August 2023.

DEPARTMENT OF Philosophy



Professor Tom Martin
Head of Department

Introduction

The Department of Philosophy was active in research in 2023. In terms of publications, a number of peer-reviewed journal publications were achieved. The highlight of the year was certainly the publication of Professor Pedro Tabensky's most recent monograph, *Camus and Fanon on the Algerian Question: An Ethics of Rebellion*, published by Routledge.

The Department continued its successful weekly research seminar series. While most presentations were made by departmental staff and Postgraduate students, notable visitors included Phila Msimang (Stellenbosch), Chris Megone (Leeds) and Anna Christen-Bloom (UCLA).

Department members were also active on the speaking circuit, with conference presentations and other talks being given at a number of local institutions (University of Cape Town, University of Johannesburg, University of Pretoria, Univeristy of Fort Hare) and internationally (Czech Republic, Iceland, Ghana).

Books/Chapters/Monographs

Tabensky, P.

Tabensky, P. (2023) *Camus and Fanon on the Algerian Question: An Ethics of Rebellion*. London: Routledge. ISBN: 9781003160670.

Concerts, Exhibitions, Performances, Workshops, Events

Kelland, L.

Kelland, L. Invited speaker. Understanding Consent and Fostering Inclusive Language in Addressing Gender-Based Violence. *Student Representative Council Training*. Steve Biko Building, Makhanda. South Africa. 18 November 2023.

Kelland, L. Invited speaker. Diversity, Inclusivity and Cohabitation. *Transformation Talk*. Hugh Masekela Hall, Makhanda. South Africa. 11 April 2023.

Kelland, L. Organiser and Participant. Reclaiming Embodiment. *My Body My Choice*. Nic's Nest, Makhanda. South Africa. 18 October 2023.

Kelland, L. Invited guest expert. What is Coercive Control and why does it matter? *VAMHN Coercive Control Podcast Series*. Online/Zoom, London. United Kingdom. 20 September 2023.

Kelland, L. and Tabensky, P.

Kelland, L. and Tabensky, P. Organisation and Facilitation. The Ethics of Conversation. *The Ethics of Conversation: DSG Staff Development*. Diocesan School for Girls, Makhanda. South Africa. 1 February - 1 November 2023.

Tabensky, P.

Tabensky, P. Plenary panel participant with Njabulo Ndebele and Trevor Manuel. Reimagining South Africa in Catalysing Africa's Renaissance. *Africa Group Board Summit 2023 (Allan & Gill Gray Foundation)*. Spier Wine Farm, Stellenbosch. South Africa. 23 April 2023.

Tabensky, P. One-day workshop to young entrepreneurs in Kigali. *Jasiri Workshop. Thinking About Ethics Together*. Jasiri, Kigali. Rwanda. 5 April 2023.

Tabensky, P. Ethics workshop at Investec. *Talk about ethics to Investec staff. Investec talk*. Investec, Johannesburg. South Africa. 6 June 2023.

Tabensky, P. Public lecture at the Johannesburg Holocaust and Genocide Centre. *JHGC Public Lecture. The Holocaust and Corruption*. Johannesburg Holocaust and Genocide Centre, Johannesburg. South Africa. 6 June 2023.

Tabensky, P. One-day workshop to around fifty young entrepreneurs from Rwanda, Kenya and Ethiopia. *Responsible Entrepreneurship. Corruption*. Jasiri, Kigali. Rwanda. 14 August 2023.

Tabensky, P. Workshop at the Investec Winter School. *Investec Winter School. The Rise of the Hustler Culture*. Investec, Johannesburg. South Africa. 31 August 2023.

Tabensky, P. (2023) "as above". In: *It's important to rethink the purpose of higher education - a philosopher of education explains why*. South Africa: The Conversation.

Peer Reviewed Subsidy-Earning Journal Research Publications

Jones, W.E.

Jones, W.E. (2023) Post-Trust, Not Post-Truth. *Critical Review*. 35 (1-2). p.63-93.

Kelland, L. and Tabensky, P.

Kelland, L. and Tabensky, P. (2023) "linNtetho zoBomi: Conversations About Life". A different way to teach ethics. *Metodo*. 11 (1). p.79-118.

Okeja, U.

Ugwu, F.O., Okeja, U., Nnadozie, E.E., Ugwu, L.E., Areji, A.C. and Onyishi, I.E. (2023) Who Cares about Time? Investigating Personality and Self-regulation in the Relationship Between Religiosity and Punctuality in Nigerian Public Service Organizations. *Journal of Social Service Research*. 49 (2). p.161-178.

Paphitis, S.A.

Paphitis, S.A., Akilu, F., Chilambo, N., Iruyenama, A., Samaroo, X., Mustapha, A., Goldsmith, K., Ismail, O. and et al. (2023) Toward an integrated approach for mental health and psychosocial support and peacebuilding in North-East Nigeria: programme description and preliminary outcomes from Counselling on Wheels. *BJPSYCH OPEN*. 9 (6). p.1-7.

Tabensky, P.

Etieyibo, E.E. and Tabensky, P. (2023) Feminism and women in African philosophy. *South African Journal of Philosophy*. 42 (3). p.161-164.

Research Papers Presented at Academic/Scientific Conferences (Non-peer-reviewed Proceedings)

Kelland, L.

Kelland, L. Playful self-discipline in the South African academy. *11th Annual Wild Coast Philosophy Symposium: Recognition*. Crawford Hotel, Cintsu. South Africa. November 2023.

Kelland, L. "We can lift each other up": Storytelling for Health, Acknowledgement, Expression, and Recovery. *European Conference on Domestic Violence*. Hilton Reykjavik Nordica, Reykjavik. Iceland. September 2023.

Tabensky, P.

Tabensky, P. Ethics and Leadership. *June Convening - The Education Collaborative*. Ashesi University, Accra. Ghana. June 2023.

Tabensky, P. Rising from the Ashes of Cultural Devastation. *Agency and Violence*. University of Pretoria, Pretoria. South Africa. June 2023.

Tabensky, P. Therapeutic Rebellion. *Legitimation of Violence*. Perduibice University, Perduibice. Czech Republic. September 2023.

Tabensky, P. Plenary Lecture on Corruption. *3rd Bianiel Stellenbosch Postdoctoral Conference*. Stellenbosch University, Stellenbosch. South Africa. September 2023.

Tabensky, P. Ethics and Leadership. *2023 June Convening*. Ashesi University, Accra. Ghana. January 2023.

Tabensky, P. The Rise of the Hustler State. *Etienne van Heerden Veldsoirée*. Victorian Hotel, Cradock. South Africa. September 2023.

DEPARTMENT OF Physics and Electronics



Professor Makaiko Chithambo
Head of Department

Introduction

The Department of Physics and Electronics, despite its size, is one of the most active at Rhodes University. This is attested to by periodic reports in the Rhodes University Digest of Statistics. Some of the key developments in the past year were in the areas of radio astronomy, solid state physics, nuclear physics and theoretical physics.

The Radio Astronomy Techniques and Technologies Research (RATT) Group was awarded the prestigious NRF Science Team Award in recognition of the group's contribution to national and international research in Radio Astronomy. Led by Distinguished **Professor Oleg Smirnov** (awarded an A2 Rating in 2023), the RATT is a leading group for interferometric imaging and has distinguished itself in the development of algorithms and software that are used extensively in various fields of astronomy worldwide. The RATT has now become a hub for astronomers throughout the world which has raised the research profile of the Department and the university.

Professor Joey Medved continued his longstanding collaborative link with Professor Brustein of Ben Gurion University. Professor Medved studies various aspects of Gravitation and Quantum Gravity related theoretical physics.

Professor Malaiko Chithambo was elected as a member of the Academy of Science of South Africa (ASSAf) in recognition of his significant achievements and advancements in applications of science. ASSAf is the national science academy in South Africa and was established by an Act of Parliament. Professor Chithambo completed his term as the President of the South African Institute of Physics (SAIP). His vision for his two-year term was to grow the membership of the SAIP, broaden its reach, and make it better able to fulfil its mission of being the voice of physics in the country, providing science policy advice and running various projects that contribute to national development. In the same year, he served as a member of international scientific committee for the International conference on luminescence and electron spin resonance dating held in Copenhagen, Denmark in June 2023.

Physics and Electronics

International Visits

Medved, A.J.M.

Medved, A.J.M. Ben Gurion University, Beer Sheva, Israel. *Research Collaboration in Theoretical Physics*. 4 June - 15 July 2023.

Peer Reviewed Subsidy-Earning Journal Research Publications

Abdalla, F.B.

de Mericia, E.J., Santos, L.C.O., Wuensche, C.A., Liccardo, V., Novaes, C.P., Delabrouille, J., Remazeilles, M., **Abdalla, F.B.** and *et al.* (2023) Testing synchrotron models and frequency resolution in BINGO 21 cm simulated maps using GNILC. *Astronomy and Astrophysics (A & A)*. 671 (2023). p.1-13.

Brilenkov, I., Fornazier, K.S.F., Hergt, L.T., Hoerning, G.A., Marins, A., **Abdalla, F.B.** and *et al.* (2023) Beyond Planck IV. Simulations and validation. *Astronomy and Astrophysics (A & A)*. 675 (2023). p.1-15.

Baidoo, L., Perley, R.A. and Smirnov, O.M.

Baidoo, L., Perley, R.A., Eilek, J., Smirnov, O.M., Vacca, V. and Enßlin, T. (2023) A Wideband Polarization Observation of Hydra A with the Jansky Very Large Array. *Astrophysical Journal*. 955 (1). p.1-11.

Bernardi, G.

Balboni, M., Bonafede, A., **Bernardi, G.**, Wittor, D., Vazza, F., Botteon, A., Carretti, E., Shimwell, T., Vacca, V. and van Weeren, R.J. (2023) Constraints on the magnetic field in the intercluster bridge A399-A401. *Astronomy and Astrophysics (A & A)*. 679 (A107). p.1-12.

Trudu, M., Pilia, M., Nicastro, L., Guidorzi, C., Orlandini, M., Zampieri, L., **Bernardi, G.** and *et al.* (2023) Simultaneous and panchromatic observations of the fast radio burst FRB 20180916B. *Astronomy and Astrophysics (A & A)*. 676 (2023). p.1-11.

Pelliciani, D., **Bernardi, G.**, Pilia, M., Naldi, G., Pupillo, G., Trudu, M., Addis, M., Bianchi, G., Bortolotti, C., Dallacasa, D., Lulli, R., MacCaferri, A. and *et al.* (2023) The Northern Cross Fast Radio Burst project: III. The FRB-magnetar connection in a sample of nearby galaxies. *Astronomy and Astrophysics (A & A)*. 674 (2023). p.1-11.

Regis, M., Korsmeier, M., **Bernardi, G.**, Pignataro, G., Reynoso-Cordova, J. and Ullio, P. (2023) The self-confinement of electrons and positrons from dark matter. *Journal of Cosmology and Astroparticle Physics*. 2023 (8). p.1-11.

Singal, J., Fornengo, N., Regis, M., **Bernardi, G.**, Bordenave, D., Branchini, E. and *et al.* (2023) The Second Radio Synchrotron Background Workshop: Conference Summary and Report. *Publications of the Astronomical Society of the Pacific*. 135 (1045). p.1-10.

Bernardi, G. and Smirnov, O.M.

Nunhokee, C.D., **Bernardi, G.**, Manti, S., Govoni, F., Bonafede, A., Venturi, T., Dallacasa, D., Murgia, M., Pizzo, R.F., **Smirnov, O.M.** and Vacca, V. (2023) Radio multifrequency observations of the galaxy cluster pair Abell 399 & 8722: 401 with WSRT. *Monthly Notices of the Royal Astronomical Society*. 522 (3). p.4421-4429.

Bernardi, G., Charles, N., Bester, L. and Smirnov, O.M.

Keller, H.A., Nikolic, B., Thyagarajan, N., Carilli, C.L., **Bernardi, G., Charles, N., Bester, L., Smirnov, O.M.** and *et al.* (2023) Search for the Epoch of Reionization with HERA: upper limits on the closure phase delay power spectrum. *Monthly Notices of the Royal Astronomical Society*. 524 (1). p.583-598.

Charles, N., Bernardi, G., Bester, L. and Smirnov, O.M.

Charles, N., Kern, N.S., Bernardi, G., Bester, L., Smirnov, O.M., Fagnoni, N. and de Lera Acedo, E. (2023) On the use of temporal filtering for mitigating galactic synchrotron calibration bias in 21 cm reionization observations. *Monthly Notices of the Royal Astronomical Society*. 522 (1). p.1009-1021.

Chithambo, M.L.

Lokesha, H.S., **Chithambo, M.L.**, Tatum, S.H. and Nagabhushana, K.R. (2023) Effect of Pr doping on structure and luminescence properties of ZrO₂ nanoparticles. *Journal of Physics D: Applied Physics*. 56 (42). p.1-11.

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Ferreira, I.A., Martins, R.T.E.K., Silva, A.O., Nunes, M.C.S., Ulsen, C., Kunzel, R., Souza, M.M., **Chithambo, M.L.**, Yoshimura, E.M. and Trindade, N.M. (2023) Thermoluminescence of rose quartz from Minas Gerais, Brazil. *Radiation Physics and Chemistry*. 209 (2023). p.1-11.

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Giovannoni, D.

Adams, L.D., **Giovannoni, D.**, Clark, V.R., Steenhuisen, S. and Martin, G.D. (2023) Reproductive Ecology of the Invasive Alien Shrub *Pyracantha angustifolia* in the Grassland Biome, South Africa. *Plants*. 12 (6). p.1-11.

Habarulema, J.B.

Okoh, D., Obafaye, A., Dare-Idowu, O., Rabi, B., Kashcheyev, A., Cesaroni, C., **Habarulema, J.B.** and Nava, B. (2023) Assessment of the performance of the TOPGNSS and ANN-MB antennas for ionospheric measurements using low-cost u-blox GNSS receivers. *Geodesy and Geodynamics*. 15(3).p.291-301, p.1-11.

Habyarimana, V., **Habarulema, J.B.**, Okoh, D., Dugassa, T. and Uwamahoro, J.C. (2023) Single station modelling of ionospheric irregularities using artificial neural networks. *Astrophysics and Space Science*. 368 (105). p.1-16.

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Massaro, F., **White, S.V.**, García-Pérez, A., Jimenez-Gallardo, A., Capetti, A., Cheung, C.C. and *et al.* (2023) Powerful Radio Sources in the Southern Sky. I. Optical Identifications. *Astrophysical Journal, Supplement Series*. 265 (2). p.1-33.

Radio Telescope (TART). *2023 International Microwave and Antenna Symposium (IMAS)*. Cairo, Egypt, Cairo. Egypt. February 2023.

Webber, M., Kuja, S.O. and Williams, J.A.

Webber, M., Kuja, S.O. and Williams, J.A. Assessment of Non-free Space Conditions on Wave Propagation. *2023 XXXVth General Assembly and Scientific Symposium of the International Union of Radio Science (URSI GASS)*. Sapporo, Japan, Sapporo. Japan. August 2023.

White, S.V.

White, S.V. The brightest (and faintest) sources in the radio sky. *2023 IEEE Radio and Antenna Days of the Indian Ocean (RADIO)*. Balaclava, Mauritius, Balaclava. Mauritius. May 2023.

Peer-reviewed Proceedings

Ghosh, S., Kuja, S.O. and Smirnov, O.M.

Ghosh, S., Human, R., Kuja, S.O., Smirnov, O.M., Molteno, T. and Okouma, P.M. Newly Designed Antenna Platform for Transient Array

DEPARTMENT OF

Political and International Studies



Associate Professor Siphokazi Magadla
Head of Department

Introduction

The Department of Political and International Studies aims to be a place of thoughtful scholarly enquiry and dynamic intellectual debate. We ran our weekly Friday seminar series, which provides an opportunity for visiting scholars as well as colleagues and Postgraduate students from Rhodes University to present papers. We also held a webinar with six (6) alumni of the Department about career opportunities for graduates of the Department. We ran our usual week-long Teach In, during which we bring visitors to give lunch-time open lectures on a topical subject. The theme for 2023 was on the South African energy crisis.

Postgraduates / Graduations

Of the one hundred and fourteen (114) third year students that graduated, five (5) passed with a distinction. One (1) of them was awarded the Terence Beard Award for the Best Student in Political and International Studies, which is awarded to the student with the highest average mark in Politics 3. The winner, Talia Aliber, passed with distinctions in Politics, Philosophy and Economics. Of the nineteen (19) Honours students that graduated, four passed with distinction, eight (8) Masters students graduated. One of the students, **Loyiso Cabe**, graduated posthumously.

Dagan Naeser, a second year Masters student, was awarded the Abe Bailey Travel Bursary, for a three-week-long all-expenses paid educational tour of the United Kingdom, 28 November - 19 December 2023, which includes visits to House of Parliament, Oxford, Cambridge, and Saint Andrews, among others.

Distinguished Visitors / International Visits

We welcomed the 2023 - 2024 Nelson Mandela Visiting Professor Nkiru Nzegwu, who is the SUNY Distinguished Professor of Africana Studies in Binghamton University in the United States. Professor Nzegwu teaches and researches in feminist and



Staff members pose with three (3) of the six (6) Masters graduates during the October 2023 Graduation, *from left to right*: Nomphumelelo Babeli, Dr Bongani Nyoka, Professor Siphokazi Magadla, Chuma Songelwa, Sivuyile Sitole and Professor Eduard Jordaan.

Photo: Department of Political and International Studies.

African philosophy; African intellectual traditions; African and African diaspora art and aesthetics; artificial intelligence and racism; and race, philosophy and the law, among others. She is the author and editor of seven books, including *Family Matters: Feminist Concepts in African Philosophy of Culture* (2006), *Issues in Contemporary African Art* (1998) and *Onitsha at the Millennium: Legacy, History and Transformation* (2013), among others. She taught a course in the third term titled “Sankofa Epistemology” and delivered the Nelson Mandela Public Lecture on Madiba’s birthday.

We received three (3) visiting lecturers, who taught a course on African Peace and Conflict: Dr Emma Birikorang from the Kofi Annan International Peacekeeping Training Centre in Ghana; Dr Andrews Atta-Asamoah from the Institute for Security Studies (ISS) in Pretoria, who is based in Addis Ababa, Ethiopia; and Dr Andrea Prah, from the African Centre for the Constructive Resolution of Disputes (ACCORD) in Durban. Dr Prah, who is a researcher at ACCORD, is a BA and Masters graduate of our Department.

We were also visited by Professor Alexandra M. Dias, from the Political Studies Department at the University of Lisbon in Portugal, as part of the Erasmus Teaching Mobility programme. She visited Professor Sally Matthews’ third year class and gave a seminar on the “Horn of Africa and the Arabian Peninsula: the interplay between domestic, regional and global dynamics in the rapprochement between Ethiopia and Eritrea”.

Significant Research Aligned Events

We hosted a number of book launches, including Professor Mandla Radebe’s book, *The Lost Prince of the ANC: The Life and Times of Jabulani Nobleman ‘Mzala’ Nxumalo* (Jacana, 2023), with the School of Journalism and Media Studies. We jointly hosted with the Department of Literary Studies in English, the School of Languages and Literatures, and the School of Journalism and Media Studies, the launch of the late Noni Jabavu’s *A Stranger at Home* (NB Publishers, 2023). We also jointly hosted the launch of *Routledge Handbook of Critical Studies in Whiteness* with the Amazwi South African Museum for Literature. We also launched our own colleague, Dr Cecilia Nedziwe’s book, “*Transnational Activities of Women-Focused Civil Society Actors in Southern Africa*” (Palgrave Macmillan, 2023). We also held a “Black Consciousness Colloquium: Genealogies, Current Trends, and New Interpretation” in September 2023, which is the anniversary month of the death of Steve Biko.

Some undergraduate and Postgraduate students presented on the Department’s multilingual project at the BAQONDE international workshop on multilingualism in higher education. We also hosted a webinar on Postgraduate funding with presentations by Thato Tantsi, and Nyeleti Honwana, who is a Program Officer of the Harry Frank Guggenheim Foundation in New York, USA.

Dr Thapelo Tselapedi participated at the 15th BRICS Summit at the Sandton Convention Centre in Johannesburg, 23 - 24 August 2023. He attended as a content strategist for the South African BRICS Business Council.

Political and International Studies

Books/Chapters/Monographs

Bischoff, P.H.

Bischoff, P.H. (2023) The AU as a global actor: positioning, responsiveness, and relevance. In: Okumu, W. and Atta-Asamoah. (eds.). *The African Union at 20: African perspectives on progress, challenges and prospects*. JHB: ISS. p.296-321. ISBN: 9781920678166.

Bischoff, P.H. (Preface.) (2023) *Integration in the Southern African Development Community Region Peoples' Agency, Popular Participation, and Democratization*. Plymouth UK: Lexington Books. p xi -xii ISBN: 9781666930207.

Diaz Pabon, F.A.

Diaz Pabon, F.A. and Jimenez, C. (2023) Protests in Latin America in the middle of ongoing global systemic crises. In: Ayuso, A., Arthur, C. and Alves, D.H. (eds.). *South America, Central America and the Caribbean 2024*. London: Routledge. p.33-55. ISBN: 9781032492797.

Diaz Pabon, F.A. (2023) *The Palgrave Encyclopaedia of Global Security Studies*. Switzerland: Palgrave Macmillan. ISBN: 9783319743189.

Magadla, S.

Magadla, S. (2023) *Guerrillas and Combative Mothers: Women and the Armed Struggle in South Africa*. Durban: University of KwaZulu-Natal Press. ISBN: 9781869145163.

Majavu, M.

Majavu, M. (2023) Toppling the Racist Anglo-Saxon Politics of Cecil Rhodes. In: Carlson, B. and Farrelly, T. (eds.). *Palgrave handbook on rethinking colonial commemorations*. Switzerland: Palgrave Macmillan. p.75-85. ISBN: 9783031286087.

Matthews, S.

Matthews, S. (2023) Constructing Knowledge About Africa in a South African University Classroom: Living Creatively with the Colonial Library. In: Andrews, N. and Khalema, N.E. (eds.). *Decolonizing African Studies*

Pedagogies Knowledge Production, Epistemic Imperialism and Black Agency. Switzerland: Palgrave Macmillan. p.99-119. ISBN: 9783031374418.

Nedziwe, C.L.

Nedziwe, C.L. and Tella, O. (2023) *Transnational Activities of Women-Focused Civil Society Actors in Southern Africa*. Switzerland: Palgrave Macmillan. ISBN: 9783031295362.

Concerts, Exhibitions, Performances, Workshops, Events

Bischoff, P.H.

Bischoff, P.H. Presentation. Progress, Challenges and Prospects - Finding Understanding in a Time of Turmoil: Reflections on Ukraine. *Stellenbosch Academy of Design and Photography*. Stellenbosch, Stellenbosch. South Africa. 17 March 2024 - 17 March 2023.

Non subsidy Earning Publications

Bischoff, P.H.

Bischoff, P.H. (2023) Opion Piece. In: *"Ukraine: A democratic South Africa needs to support sovereign national self-determination and oppose all imperial behaviour"*. JHB: Joburg Post.

Diaz Pabon, F.A.

Diaz Pabon, F.A. (2023) Opinion piece. In: *'Men must be held accountable'*. Online: Development and Cooperation.

Diaz Pabon, F.A. and Alvarez, R. (2023) Opinion piece. In: *"Perú casi dos meses y más de 60 civiles muertos después"*. South Africa: The Conversation.

Diaz Pabon, F.A. (2023) Opinion piece. In: *"Economic growth is not a magic wand for Africa"*. Online: Development and Cooperation.

Diaz Pabon, F.A. (2023) Opinion Piece. In: *'Venezuelans continue to leave their country on dangerous treks'*. Online: Development and Cooperation.

Diaz Pabon, F.A. and Castañeda, B. (2023) Opinion piece. In: *La gestión del gobierno Petro: Amazonia y petróleo. Desde Abajo*. Online: desde abajo.

Diaz Pabon, F.A. and Madonko, T. (2023) Opinion piece. In: *Africa, don't swallow the poison pill of austerity any more*. Online: Aljazeera.

Matthews, S. and Bell, J.

Matthews, S. and Bell, J. (2023) Fairtrade: study finds premium label



Author and discussants at the launch of Dr Cecilia Nedziwe's book, *Transnational Activities of Women-Focused Civil Society Actors in Southern Africa*. Photo: Department of Political and International Studies.



BAQONDE, International Workshop on Multilingualism in Higher Education, hosted at Rhodes University in September 2023.
Photo: Department of Political and International Studies.

does not always benefit workers on South African wine farms. In: *The Conversation*. South Africa: The Conversation.

Peer Reviewed Subsidy-Earning Journal Research Publications

Acharya, A.

Acharya, A., Estevadeordal, A. and Goodman, L.W. (2023) Multipolar or multiplex? Interaction capacity, global cooperation and world order. *International Affairs*. 99 (6). p.2339-2365.

Acharya, A. (2023) Before the Nation-State: Civilizations, World Orders, and the Origins of Global International Relations. *Chinese Journal of International Politics*. 16 (2023). p.263-288.

Witt, A., Anderl, F., **Acharya, A.**, Shahi, D., Kamola, I. and Cornelissen, S. (2023) How to Problematize the Global? *Millennium: Journal of International Studies*. 51 (1). p.33-80.

Babeli, N.Q.E. and Ntlokwana, A.

Knowles, C.R., **Babeli, N.Q.E.**, **Ntlokwana, A.**, Ntombolwana, Z.Q. and Sobuza, Z.Z. (2023) The politics of knowledge in South African universities: Students' perspectives. *Transformation in Higher Education*. 8 (2023). p.1-9.

Chipaike, R.

Chipaike, R., Nunoo, I. and Chingono, N. (2023) Chinese covid diplomacy in Africa: Interrogating Zimbabwe's experience. *Cogent Social Sciences*. 9 (1). p.1-13.

Diaz Pabon, F.A.

Diaz Pabon, F.A. and Duyvesteyn, I. (2023) Civil Wars: Escalation and De-Escalation. *Civil Wars*. 25 (2-3). p.229-248.

Grovogui, S.N.

Grovogui, S.N. (2023) Putin's Ukraine aggression: how should an African respond? *International Politics*. 60 (1). p.214-235.

Majavu, M.

Majavu, M. (2023) Colorblind tools: global technologies of racial powerby Marzia Milazzo, Illinois, Northwestern University Press, 2022, (paperback), ISBN 9780810145269. *Ethnic and Racial Studies*. 2023 (2023). p.1-3.

Majavu, M. (2023) Post-apartheid whiteness and unlearning racism. *Journal of Southern African Studies*. 49 (1). p.177-178.

Majavu, M. (2023) Reinterpreting the Historical Memory of the Black Peril in South Africa. *Theoria*. 70 (4). p.1-25.

Majavu, M. (2023) Laundering racial capitalism in post-apartheid South Africa. *Politikon*. 50 (3). p.1-15.

Matthews, S.

Matthews, S. (2023) Rethinking comparative politics in the context of debates about decolonising higher education. *Critical Studies In Teaching and Learning (CriSTal)*. 11 (2). p.30-47.

Matthews, S. (2023) Listening to and representing the interests of the poor: some thoughts on Deveaux's *Poverty, Solidarity, and Poor-Led Social Movements*. *Journal of Global Ethics*. 19 (3). p.225-234.

Maziyanhanga, Z. and Majavu, M.

Maziyanhanga, Z. and Majavu, M. (2023) A critical review of the Zimbabwe special temporary residence permits, 2010-2021. *Politikon*. 50 (3). p.1-16.

Nyoka, B.

Nyoka, B. (2023) Bernard Magubane on the political economy of race and class in South Africa. *Ethnic and Racial Studies*. 2023 (2023). p.1-11.

Salem, A.A.

Salem, A.A. (2023) Academic Historiographic Remedies of Colonialist Images of Egypt's Nationalist Party. *Contemporary Arab Affairs*. 16 (3). p.284-296.

Shivambu, M.

Knowles, C.R., James, A., Khoza, L.P., Mtwa, Z.A., Roboji, P.M. and Shivambu, M. (2023) Problematising the South African Higher Education inequalities exposed during the Covid-19 pandemic: Students' perspectives. *Critical Studies In Teaching and Learning (CriSTal)*. 11 (2). p.1-21.

Souare, I.

Souare, I. (2023) Overcoming 'Smallness': Niger as an Elected Member of the UN Security Council, 2020-2022. *International Peacekeeping*. 30 (3). p.1-11.

Research Papers Presented at Academic/Scientific Conferences (Non-peer-reviewed Proceedings)

Diaz Pabon, F.A.

Diaz Pabon, F.A. and Shifa, M. 'Wellbeing, assets and climate change shocks'. *ARUA Climate Change and Inequalities Symposium*. Cape town, Cape Town. Cape Town. March 2023.

Diaz Pabon, F.A. and Shifa, M. "Wellbeing, assets and climate change shocks in South Africa". *International Association of Feminist Economics (IAFFE) conference*. Cape Town. April 2023.

Diaz Pabon, F.A. and Shifa, M. 'Development, Inequalities, and Conflict: The case of Ethiopia'. *Economic Society of South Africa Biannual Conference (ESSA)*. Pretoria, Pretoria. SA. April 2023.



Dr Thapelo Tselapedi attended the 23 - 24 August 2023 BRICS Summit at the Sandton Convention Centre in Johannesburg.

- Diaz Pabon, F.A. and Mendez, P. 'Inequality of income and wealth'. *International Economics Association conference*. Medellin. June 2023.
- Diaz Pabon, F.A., Shifa, F.A., Manda, M., Oduro, D. and *et al.* (2023) 'Climate change-related shocks, resilience, and welfare outcomes: Evidence from Ghana, Kenya, and South Africa'. *Inequality Work and Nature Conference*. Cape Town. SA. March 2023.
- Magadla, S.
- Magadla, S. "The best ideas are free": The value of research in the times of 'radical entanglement'. *Rhodes University Postgraduate Conference*. Rhodes University, Mkhanda. South Africa. September 2023.
- Magadla, S. "Towards a fully-fledged multilingual pedagogy in Political & International Studies 2017- 2023". *BAQONDE international multilingualism workshop*. Hosted by the School of Languages and Literatures and the RU Language Committee. Amazwi, Mkhanda. South Africa. September 2023.
- Magadla, S. and Xaba, M.
- Magadla, S. and Xaba, M. "Soul Friends: Cultural work as political friendship". *Women's Friendship as Political History in South Africa: Colloquium*. Historical Studies. University of Cape Town, Cape Town. South Africa. August 2023.
- Matthews, S.
- Matthews, S. Place, Positionality and Knowledge Production on Africa: What does it mean to create knowledge 'from Africa'? *Africa Multiple Cluster of Excellence Annual Conference 2023. Reconfiguring African Studies through Spatialities*. University of Bayreuth, Bayreuth. Germany. October 2023.
- Matthews, S. Differing Approaches to the Politics of Knowledge Production in African Studies: on Restoration and Translation. *African Studies Association of Africa Fifth Biennial Conference*. Centre ARRUE, Lubumbashi. Democratic Republic of the Congo. October 2023.

Below: Terence Beard Award for the Best Student in Political and International Studies, Talia Aliber, with her parents.

Photos: Department of Political and International Studies.



DEPARTMENT OF Psychology



Professor Liezille Jacobs
Head of Department

Introduction

In 2023, the Department of Psychology had a very productive research programme. Various Postgraduate students at Honours, Masters and Doctoral level graduated. One (1) staff member, Dineo Diale, received her Doctorate degree at UNISA.

Several of our Research Associates published in subsidy earning journals and wrote at least five (5) books (Moerdyk, A.P. and Furnham, A. (2023) *Assessment and Selection in the 21st Century: Fairness, equity, and competitive advantage*; Healy-Cullen, S. and Morison, T. (2023) *The Palgrave Encyclopaedia of Sexuality Education*. Switzerland: Palgrave Macmillan. ISBN: 9783030953522; Shuttleworth-Edwards, A.B. and Truter, S. Shuttleworth-Edwards, A.B. and Truter, S. (2023) *Cross-Culture Cognitive Test Norms*. Somerset West: Inter-Ed Publishers. ISBN: 9780620982146; Shuttleworth-Edwards, A.B. and Truter, S. (2023) *Cross-Cultural Cognitive Test Norms. An Advanced Collation from Africa*. Somerset West: Inter-Ed Publishers. ISBN: 9780620982146). Permanent staff members attended local and international conferences and two (2) colleagues were awarded Visiting Scholar positions at Harvard University and Stanford University during their sabbatical.

Postgraduates / Graduations

In 2023, thirteen (13) African females, three (3) white males, nine (9) white females and two (2) African males graduated - a total of twenty-seven (27) Honours Postgraduate students. One (1) white female and one (1) black male Doctoral candidate graduated in 2023. One (1) African male student graduated with a Masters by thesis and six (6) students graduated with a Masters in Clinical and Counselling Psychology: one (1) African male, two (2) African females and three (3) white females.

Distinguished Visitors / International Visits

Sizwe Zondo visited Harvard University during his sabbatical in 2023 as an African Fellow. Professor Liezille Jacobs was awarded a Visiting Scholar position in the Psychiatry and Behavioral Health Department at Stanford University during her sabbatical (July - December 2023).

Significant Research Aligned Events

Dr Sharon Truter was awarded a Fellowship by the British Neuropsychological Society (BNS) in conjunction with the Division of Neuropsychology of the British Psychological Society (DoN). It was fulfilled by attending part of Glasgow University's Neuropsychology MSc and Postgraduate Diploma in Clinical /Applied Neuropsychology in October 2023.

DEPARTMENT OF

Psychology

Books/Chapters/Monographs

Akhurst, J.E.

Akhurst, J.E. (2023) Peace and Reconciliation. In H. S. Friedman and C. H. Markey. *Encyclopedia of Mental Health*. 3ed., volume 2, pp237-245. Elsevier. <https://doi.org/10.1016/B978-0-323-91497-0.00100-4>

Kangaude, G.D.

Kangaude, G.D., Sibande, C.G., Ross, S.D., Liu, M.X. (2023). Abortion law reform in Malawi: a case study in stakeholder engagement, public education, and human rights advocacy. In: *Research Handbook on International Abortion Law* (pp. 82-102). Edward Elgar Publishing. ISBN: 9781839108143.

Moerdyk, A.P.

Moerdyk, A.P. and Furnham, A. (2023) *Assessment and Selection in the 21st Century: Fairness, equity and competitive advantage*. New York: Peter Lang. ISBN: 9781803740065.

Morison, T.

Morison, T. and Le Grice, J. (2023) Reproductive Justice: Illuminating the Intersectional Politics of Sexual and Reproductive Issues. In: Zurbriggen, E.L. and Capdevila, R. (eds.). In the *Palgrave Handbook of Power, Gender, and Psychology*. Switzerland: Springer International Publishing. p.419-435. ISBN: 9783031415302.

Healy-Cullen, S. and **Morison, T.** (2023) *The Palgrave Encyclopaedia of Sexuality Education*. Switzerland: Palgrave Macmillan. ISBN: 9783030953522.

Shuttleworth-Edwards, A.B. and **Truter, S.**

Shuttleworth-Edwards, A.B. and **Truter, S.** (2023) *Cross-Culture Cognitive Test Norms*. Somerset West: Inter-Ed Publishers. ISBN: 9780620982146.

Shuttleworth-Edwards, A.B. and **Truter, S.** (2023) *Cross-Cultural Cognitive Test Norms. An Advanced Collation from Africa*. Somerset West: Inter-Ed Publishers. ISBN: 9780620982146.

Shuttleworth-Edwards, A.B.

Shuttleworth-Edwards, A. B. (2023). Cognitive test norms within multi-cultural, multiracial, multilingual, multi-opportunity South Africa. In G. J. Boyle, Y. Stern, D. J. Stein, B. J. Sahakian, C. J. Golden, T. M. Lee, and S. A. Chen (eds.), *The Sage Handbook of Clinical Neuropsychology. Clinical Neuropsychological Assessment and Diagnosis*. Sage. p. 94-107. ISBN: 9781529717754.

Peer Reviewed Subsidy-Earning Journal Research Publications

Akhurst, J.E.

Akhurst, J.E. and Leach, M.M. (2023) Confidentiality, informed consent, and multiple relationships in four emerging regions. *Ethics and Behavior*. 33 (3). p.175-182.

Leach, M.M. and **Akhurst, J.E.** (2023) Informed consent, multiple relationships, and confidentiality: a comparison across four countries. *Ethics and Behavior*. 33 (3). p.231-238.

Booyesen, D.D.

Booyesen, D.D. and Kagee, A. (2023) Trauma survivors' perceptions and experiences of prolonged exposure for PTSD at a psychology clinic. *South African Journal of Psychiatry*. 29 (2023). p.1-7.

Campbell, M.M.

Matshabane, O.P., Appelbaum, P.S., Faure, M.C., Marshall, P.A., Stein, D.J., de Vries, J. and **Campbell, M.M.** (2023) Lessons learned from the translation of the Internalised Stigma of Mental Illness (ISMI) scale into isiXhosa for use with South African Xhosa people with schizophrenia. *Transcultural Psychiatry*. 2023 (2023). p.1-12.

Chiweshe, M.

Strong, L., Coast, E., Feters, T., **Chiweshe, M.**, Getachew, A., Griffin, R. and Tembo, L. (2023) 'I was waiting for my period': Understanding pregnancy recognition among adolescents seeking abortions in Ethiopia, Malawi, and Zambia. *Contraception*. 123 (2023). p.1-6.

Groves, R., Bassett, M. T., Backes, E. P., **Chiweshe, M.** (2023). Informing Decisionmakers in Real Time. *Issues in Science Technology*. 40(1). <https://doi.org/10.58875/HOLF9049>

Collins, A.

Wentzel, D.L., **Collins, A.** and Brysiewicz, P. (2023) An intervention to manage compassion fatigue in oncology nurses in Durban, South Africa. *Health SA Gesondheid*. 28 (2023). p.1-7.

Du Plessis, U. and **Macleod, C.I.**

Du Plessis, U. and **Macleod, C.I.** (2023) Governing pregnancy in the Global South: the case of post-apartheid South Africa. *Health, Risk and Society*. 25 (7-8). p.350-365.

Chiweshe, M.

Strong, L., Coast, E., Feters, T., **Chiweshe, M.**, Getachew, A., Griffin, R. and Tembo, L. (2023) Understanding pregnancy recognition among adolescents seeking abortions in Ethiopia, Malawi, and Zambia. *Contraception*. 123 (2023). p.1-6. DOI: 10.1016/j.contraception.2023.110006

Groves, R., Bassett, M. T., Backes, E. P., and **Chiweshe, M.** (2023). Informing Decision makers in Real Time. *Issues in Science Technology*. 40(1). <https://doi.org/10.58875/HOLF9049>

Strong, J., Coast, E., Feters, T., **Chiweshe, M.**, Getachew, A., Griffin, R. and Tembo, L. (2023). I was waiting for my period: Understanding pregnancy recognition among adolescents seeking abortions in Ethiopia, Malawi, and Zambia. *Contraception*. 123 (2023). p.1-6. <https://doi.org/10.1016/j.contraception.2023.110006>

Groenewald, C.

Abdelatif, N., Naidoo, I., Dunn, S., Mazinu, M., Essack, Z., **Groenewald, C.** and *et al.* (2023) Heterogeneity in COVID-19 infection among older persons in South Africa: Evidence from national surveillance data. *Frontiers in Public Health*. 11 (2023). p.1-12.

Groenewald, C., Isaacs, N. and Qoza, P. (2023) Hope, agency, and adolescents' sexual and reproductive health: A mini review. *Frontiers in Reproductive Health*. 5 (2023). p.1-11.

Groenewald, C., Isaacs, D. and Maluleka, M. (2023) "It Doesn't Cure, but It Protects?": COVID-19 Vaccines through the Eyes of Children and Their Parents. *Vaccines*. 11 (8). p.1-13.

Haine, P.C., Booyesen, D.D. and **Young, C.**

Haine, P.C., Booyesen, D.D. and **Young, C.** (2023) 'Crushe all over again': the professional experiences of early career counselling psychologists in South Africa. *South African Journal of Psychology*. 2023 (2023). p.1-14.

Haine, P. C., **Young, C.,** **Booyesen, D., D.** (2023) Looking back to move forward: a scoping review of counselling psychology in South Africa. *South African Journal of Psychology*. 2023;53(1). P.32-43.

Jacobs, L. and **Chele, P.**

Jacobs, L. and **Chele, P.** (2023) How Male Vloggers Construct Their Substance Use and Substance Use Recovery on Youtube. *Gender & Behaviour*. 21 (2). p.1-11.

Macleod, C.I.

Macleod, C.I., Lavelanet, A., Escobar, A., Garegnani, L., Oltra, G. and Franco, J.V.F. (2023) The effects of different abortion policy environments on women's health (Protocol). *Cochrane Database of Systematic Reviews*. 0 (0). p.1-17.

Macleod, C.I., Reynolds, J. and Delate, R. (2023) Violence against women who sell sex in eastern and southern Africa: a scoping review. *Trauma, Violence and Abuse*. 25 (1). p.691-703.

Macleod, C.I. and **Reuvers, M.J.**

Macleod, C.I., **Reuvers, M.J.,** **Reynolds, J.,** Lavelanet, A. and Delate, R. (2023) Comparative situational analysis of comprehensive abortion care in four Southern African countries. *Global Public Health*. 18 (1). p.1-11.

Macleod, C. I., Glover, J. M., Makuse, M., Kelland, L., and Paphitis, S. A. (2023). Male Peer Talk About Menstruation: Discursively Bolstering Hegemonic Masculinities Among Young Men in South Africa. *Women's Reproductive Health*. 10(1), 6-23. DOI: 10.1080/23293691.2022.205783

Macleod, C.I., Du Plessis, U., Reuvers, M.J. and Kalyanaraman, Y.
Macleod, C.I., Du Plessis, U., Reuvers, M.J. and Kalyanaraman, Y. Inserting feminist theory into public reproductive health: The supportability framework. *Psychology of Women and Equalities Section Annual Conference 2023*. Cumberland Lodge, Windsor. United Kingdom. July 2023.

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Tappin, J., Riley, S. and **Morison, T.** (2023) How to have great sex: Exploring sexual subjectivities and discourses of desire in mainstream online media aimed at women. *Feminism & Psychology*. (2023). p.1-21.

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Wannenburg, N. and Van Niekerk, R. (2023) Increasing health professionals' ability to recognize, diagnose, and intervene in autism spectrum disorder cases in africa: Examples from specific developmental stages - a longitudinal case study. *Student's Journal of Health Research Africa*. 2023 (2023). p.1-14. DOI: <https://doi.org/10.51168/sjhrafrica.v4i3.339>

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Freeman, E.F., and **Akhurst, J.E.** Wild spaces and talk therapies: reflective conversations. *British Psychological Society Division of Counselling Psychology conference*. York, UK. June, 2023.

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Booyesen, D.D., Kaminer, D.B., Patel, A.P., Sardana, S.S. and Kristensen, C.K. Improving Access to Evidence-Based Interventions for Trauma-Exposed Adults in Low- And Middle-Income Countries: An International Society for Traumatic Stress Studies (ISTSS) Briefing Paper. *39th Annual Meeting of the International Society of Traumatic Stress Studies (ISTSS)*. Westin Bonaventure Hotel, Los Angeles. United States of America. November 2023.

Booyesen, D.D. and Rauch, R.S. Task-shifting of Prolonged Exposure for Primary Care in South Africa: Lessons, challenges, and strategies for implementation in low resourced settings. *39th Annual Meeting of the International Society of Traumatic Stress Studies (ISTSS)*. Sponsored Westin Bonaventure Hotel, Los Angeles. United States of America. November 2023.

Booyesen, D.D., Shabangu, P.N.N. and Markham, K.E.

Booyesen, D.D., Rossouw, J.R., **Shabangu, P.N.N.** and Markham, K.E. Prolonged exposure therapy for PTSD in a South African context: Progress, challenges, and future directions. *27th Annual South African Psychology Congress*. Emperors Palace, Johannesburg. South Africa. October 2023.

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Dikgole, K.S. and Macleod, C.I.

Dikgole, K.S. and Macleod, C.I. Strengthen integration for better SRHR outcomes. *22nd International Conference on AIDS and STIs in Africa*. Harare. Zimbabwe. December 2023.

Macleod, C.I.

Macleod, C.I. Shifting the narrative: from intendedness to supportability. *Psychology of Women and Equalities Section Annual Conference 2023*.

Cumberland Lodge, Windsor. United Kingdom. July 2023.

Macleod, C.I. Comparative situational analysis of comprehensive abortion care in four Southern African countries. *WHO/UNFPA 2gether4-SRHR regional Eastern and Southern African summit*. Johannesburg, Johannesburg. South Africa. June 2023.

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Mankantshu, B., Steyn, C. and Campbell, M.M. Translation of the composite of abuse scale into isiXhosa and Afrikaans. *27th Annual South African Psychology Congress*. Emperors Palace, Johannesburg. South Africa. October 2023.

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Parkinson, C.A. and Campbell, M.M.

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Reuvers, M.J. and Macleod, C.I.

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Sekese, D.N. and Campbell, M.M.

Sekese, D.N. and Campbell, M.M. Current psychological distress and coping strategies reported by university staff in reaction to the COVID-19 pandemic. *27th Annual South African Psychological Congress*. Emperors Palace, Johannesburg. South Africa. October 2023.

Truter, S. and Shuttleworth-Edwards, A.B.

Truter, S. and Shuttleworth-Edwards, A.B. A comparison of performance of educationally disadvantaged non-English-speaking participants on a category verbal fluency test using English or the first language. *51st Annual Meeting of the International Neuropsychological Society (INS)*. Town and Country Resort, San Diego, United States. February 2023.

Truter, S. and Shuttleworth-Edwards, A.B. A comparison of cut-off points for invalid cognitive test performance established on nonclinical versus clinical samples for South African educationally disadvantaged individuals. *51st Annual Meeting of the International Neuropsychological Society (INS)*. Town and Country Resort, San Diego, United States. February 2023.

Truter, S. and Shuttleworth-Edwards, A.B. A collation of Africa-based cognitive test norms to facilitate cross-cultural assessment practices. *27th Annual Congress of the Psychological Society of South Africa (PsySSA)*. Emperors Palace, Johannesburg, South Africa. October 2023.

Truter, S. and Shuttleworth-Edwards, A.B. Clock Drawing Test: An easy-to-administer, inexpensive and possibly culture-fair test. *27th Annual Congress of the Psychological Society of South Africa (PsySSA)*. Emperors Palace, Johannesburg, South Africa. October 2023.



Photo: Chris Marais.

RHODES UNIVERSITY

Rhodes Business School



Professor Owen Skae

Director

Introduction

Rhodes Business School aims to actively pursue research evidence to inform teaching, learning, and the curriculum, as well as contribute to knowledge that is meaningful to students, academics, businesses, and society, to advance the overall mission of leadership for sustainability. Its research goal is to enhance the development of students and staff to produce and publish high-quality research for scholars and society that contributes to knowledge about leadership for sustainability, including developing research focus areas such as responsible leadership, governance, and entrepreneurship with a social focus.

In 2023, we ran twenty-three (23) short course programmes, with three hundred and thirty-one (331) Certificates of Competence and thirty-eight (38) Letters of Attendance issued, returning us to pre-COVID activity levels.

Postgraduates / Graduations

One (1) Doctor of Philosophy (PhD), one (1) Master of Commerce (MCom), eleven (11) Master of Business Administration (MBA), eighteen (18) Postgraduate Diploma in Enterprise Management (PGDipEntMgt), twenty-one (21) Postgraduate in Business Analysis (PGDipBusAnalysis), and twenty-nine (29) Advanced Diploma in Business Analysis (AdvDipBusAnalysis) candidates, graduated, giving a total of eighty-one (81) Postgraduate graduations, which equals our record year in 2020.

The highlight of the graduation was our first-ever MCom graduate, **Emmanuel Okello**, and the first cohort of AdvDip-Business Analysis diplomates. The latter is particularly significant as this programme is delivered solely by distance mode. We had several distinctions, and our 7th PhD graduate (pleasingly our second in two (2) years), **Cornelia Gibson-Tessendorf**. **Craig Chambers**, **Collette Huxtable**, and **Sean Thackeray** obtained the MBA with distinction. **Pedzisai Makoni** obtained the PGDipEntMgt with distinction. **Sibusiso Makhasi**, **Tafara**



Rhodes Business School.
Photo: Chris Marais.

The topic of values-based leadership is relatively easy to decipher but difficult to implement successfully, due largely to a few factors that work against it. However, when achieved, the positive impact on organisational culture and performance is immense.

Muguti, Ndumiso Sijako, and **Botle Tsie** obtained the PGDipBusAnalysis with distinction. **Cassandra Bhayla, Armant Hitchcock**, and **Andy Mngceke** obtained the AdvDipBus-Analysis with distinction.

The recipient of the Archbishop Thabo Makgoba Award for the MBA Responsible Leadership Essay was **Kurt van Staden**.

Distinguished Visitors / International Visits

Duvenage, W.

Mr Wayne Duvenage, *Archbishop Thabo Makgoba Development Trust Annual Lecture*. 5th October 2023.

Wayne Duvenage, the Chief Executive Officer of Organisation Undoing Tax Abuse (OUTA), was the 9th Speaker at our annual Archbishop Thabo Makgoba Development Trust annual lecture on Values Based Leadership. In the introduction to his speech, he reminded the audience, "The destruction that looms if we continue to conduct ourselves in the manner we do is not only limited to humanity but all life which hangs in the balance of our delicate ecosystems, increasingly threatened by man's greed and insatiable desire for more than we need."

The topic of values-based leadership is relatively easy to decipher but difficult to implement successfully, due largely to a few factors that work against it. However, when achieved, the positive impact on organisational culture and performance

is immense. At its core, values-based leadership is applying strategy and decision-making rooted in ethical and moral foundations. However, this approach often places business leaders at odds with those who advance the straight jacket of maximising shareholder returns and executive bonuses. Advancing the need to assess and reduce their organisations' negative impact on society and the environment does tend to come at a price of reduced profitability."

He concluded by stating candidly, "values-based leadership is not an option. It is a necessity. Whether in the private or public sector, embracing values that heighten the priority placed on society and the environment is necessary for a prosperous and sustainable future. As we navigate the complexities of our changing world and political environments, citizens and consumers must demand and embrace values-based leadership, using their collective power to ensure the decisions and actions taken are in the public's and future generations' best interests. This fundamental shift in mindset and approach is critical for building a prosperous and just society, where accountability, transparency, and ethical conduct are at the forefront of our decision-making, and which ultimately shapes our collective destiny."

Rhodes Business School

Books/Chapters/Monographs

Pearse, N.J.

Amos, T. and Pearse, N.J. (2023) *Human Resource Management*. 6th Ed. Cape Town: Juta & Co. ISBN: 9783031194160.

Amos, T. and Pearse, N.J. (2023) Networking. In: Nieuwenhuizen, C. (ed.). *Entrepreneurship: An African Perspective*. 2nd Ed. Cape Town: Juta & Co. p.1-484. ISBN: 9781998962204.

Pearse, N.J. and Gavaza, M.A.

Pearse, N.J. and Gavaza, M.A. (2023) Social Media Use and Maturity in a Youth-Oriented Community Radio Station: The Case of Rhodes Music Radio. In: Tsarwe, S. and Chiumbu, S. (eds.). *Converged Radio, Youth and Urbanity in Africa: Emerging trends and perspectives*. Switzerland: Palgrave Macmillan. p.155-184. ISBN: 9783031194177.

Skae, F.O.

Skae, F.O. (2023) *Managerial Finance*. 10th Ed. Durban: LexisNexis (Pty) Ltd. ISBN: 9781776177608.

Peer Reviewed Subsidy-Earning Journal Research Publications

Mtotoya, M.M.

Seoke, S., Mamabolo, A. and Mtotoya, M.M. (2023) The Impact of Mass Media Entrepreneurship Education on Entrepreneurial Mindset and Intentions. *Entrepreneurship Education and Pedagogy*. 7 (4). p.1-28.

Mtotoya, M.M. and Mohapeloa, M.M.E.

Mtotoya, M.M. and Mohapeloa, M.M.E. (2023) A guiding framework for theory adaptation in operations management studies. *Cogent Business and Management*. 10 (3). p.1-11.

Peer-reviewed Proceedings

Mtotoya, M.M. and Mohapeloa, M.M.E.

Mtotoya, M.M. and Mohapeloa, M.M.E. Conceptual Framework for Configurations Development and Measurement: An Approach for Manufacturing Firms During Operational Uncertainty. *Proceedings of the 16th International Business Conference*. Swakopmund, Namibia. Namibia. September 2023.

Research Papers Presented at Academic/Scientific Conferences (Non-peer-reviewed Proceedings)

Cuthbert, C. and Pearse, N.J.

Cuthbert, C., Pearse, N.J. and Bradshaw, K. Data Visualization of Budgeting Assumptions: An Illustrative Case of Transdisciplinary Applied Knowledge. *IMSCI 2023*. Orlando, Florida. United States. March 2023.

Cuthbert, C., Pearse, N.J. and Bradshaw, K. A Transdisciplinary Methodology for Knowledge Integration. *WMSCI 2023*. Orlando, Florida. United States. September 2023.



Photo: Chris Marais.

SCHOOL OF Languages and Literatures



Dr Bulelwa Nosilela
Head of School

Introduction

The School of Languages and Literatures (SoLL) with its seven (7) sections, African Language Studies, Afrikaans and Netherlands Studies, Chinese Studies, Classical Studies, Creative Writing, French and Francophone Studies and German Studies stands as a vibrant hub of linguistic inquiry and cultural exploration, embodying the university's visionary commitment to advancing knowledge and understanding through rigorous research. Our research activities are guided by a steadfast dedication to the university's mission of promoting inclusivity and diversity across all facets of academia.

The School successfully contributes to the imparting of many cultures, languages and literatures in the university. The School hosts a highly prominent and productive SARCHI Chair for the Intellectualisation of African Languages, Multilingualism and Education. In this report, we explore the multifaceted research endeavours undertaken within the School of Languages and Literatures, from literary studies, comparative linguistics to sociolinguistic studies, and ancient and contemporary languages. Our lecturers, associates and students engage in a wide array of research initiatives that not only uphold the university's vision but also strive to push the boundaries of linguistic scholarship.

Postgraduates / Graduations

The School of Languages and Literatures (SoLL) continued in its mission to produce graduates that contribute to multilingual society.

Distinguished Visitors / International Visits and Significant Research Aligned Events

African Language Studies

2023 was the year when isiXhosa, which is the language taught in the African Language Studies (ALS) Section, celebrated 200 years of being a written language where the first manuscript



Front row, from left to right: Councillor Xhonxa; Prince Z. Burns-Ncamashe and Deputy Minister (CoGTA), Hon MEC N. Kotsiwe.

Back row, from left to right: Professor Mabokang Monnapula-Mapesela (Deputy Vice-Chancellor: Academic and Student Affairs; Mr Sam (ALS), Professor Nkomo, NRF SARCHI Chair (ALS); Professor Sizwe Mabizela (Rhodes Vice-Chancellor); Ms Mbungwana (ALS), Professor Kwatsha (ALS); Dr Nosilela (SoLL Head) and Dr Kwezi Mzilikazi (Deputy Vice Chancellor: Research, Innovation and Strategic Partnerships).

Photo: School of Languages and Literatures.

in isiXhosa was written in 1823. This section hosted a *Celebration of 200 years of writing of isiXhosa and Mqhayi* day where the guest speaker was Prince Z. Burns-Ncamashe, the Deputy Minister for Cooperative Governance and Traditional Affairs in South Africa (CoGTA). One of the speakers was Hon MEC for the Department of Sports, Recreation, Arts and Culture (DSRAC) N. Kotsiwe.

Dr Buelwa Nosilela was later invited to present at the 200 years isiXhosa writing colloquium hosted by the Eastern Cape Department of Sport, Recreation, Arts and Culture (DSRAC), Rhodes University Library and South African Library for the Blind in November 2023 in Makhanda. **Professor Linda Kwatsha** presented at the Nelson Mandela University on Conversation on Celebrating 200 years of IsiXhosa Written Word hosted by the Faculty of Humanities Language and Literature in collaboration with the Institute for the Humanities and Social Sciences.

African Language Studies (ALS) hosted a seminar by **Professor Langa Khumalo**, the Director of the South African Centre for Digital Languages Resources (SADiLaR) in September 2023. The topic of his presentation was: *Resources for Teaching (digital) African Languages*. He discussed the critical challenges that confront the development of language resources for African languages and highlighted how the learning and teaching of African languages can only be impactful if it shapes graduates for the future with a strong balance of both technological and analytical competencies.

ALS had a seminar by Dr Agoswin Musah who was a visiting scholar in ALS under the African Humanities from University of Education in Ghana. He presented a paper on 'African language islands', with a focus on Bono speakers in the village of Kalande in northern Ghana.

ALS co-hosted a book launch with the Departments of Politics, English and Literary Studies and School of Journalism and Media Studies. The book launch was on a book by ALS former student **Dr Athambile Masola** and **Dr Makhosazana Xaba** on **Noni Jabavu** and it was also celebrating women's month.

Staff members from ALS attended the following conferences: African Languages Association of Southern Africa (ALASA), Southern African Linguistics and Applied Linguistics Society (SALALS), African Association of Lexicography (AFRILEX) and the West African Linguistics Society. In the Southern African Linguistics and Applied Linguistics Society Annual Conference, ALS honours student, Kgabane Lengane was awarded the 'Young Linguist Award' for 2023. **Professor Dion Nkomo** was congratulated for his role as the winning student's supervisor.

ALS also hosted the Baqonde international workshop on advancing the use of African languages in Education. There were colleagues from local universities which are UWC, NWU, UKZN and international universities, Groningen in Netherlands, Salamanca in Spain and Trinity College Dublin in Ireland. Staff members in the section such as Professor Nkomo, Dr Nosilela and Dr Ketiwe Ndhlovu presented in the workshop. Other staff



Book launch and celebration of women's month, *from, left to right*: Professor Moody (Registrar); Dr A Masola and Dr M Xaba (Authors); Professor Spencer (English and Literature HoD); Dr Kwezi Mzilikazi (Deputy Vice-Chancellor: Research, Innovation and Strategic Partnerships); Dr Nosilela (School of Languages of Literatures HoS); Ms T Gqubule-Mbeki (Journalism and Media Studies), Ms M Mahlo; Dr P Hellemann (Education); Dr Kelly (Director, Equity and Institutional Culture) and Professor Magadla (Politics and International Studies, HoD).

Photo: School of Languages and Literatures.

members from other disciplines that ALS collaborates with in the university such as Professor S Magadla and Ms Z Dana and students (Politics and International Studies), Professor Du Toit (School of Journalism and Media Studies), Mr N Kramm, Ms S Mawonga and colleagues (Chertl), Ms S Mokuku and students (Drama Department), H. Kuhlana (Education) as well as T. Pillay (Botany) presented in the workshop. These are all colleagues who are interested in the project focus areas of multilingual pedagogies or multilingual resources.

Afrikaans and Netherlandic Studies Section

Dr Marisa Botha was invited by the English National Language Body (ENLB) of the Pan South African Language Board (PanSALB) to take part in a panel discussion on "English in South/ern Africa - past and present". The colloquium was held at the Amazwi National Museum of Literature in Makhanda. Rhodes University was well-represented with Professor Dion Nkomo (SoLL) and Professor Mark de Vos (Linguistics) also taking part in this panel discussion. Dr Botha was invited in her capacity as a member of the PanSALB Eastern Cape Provincial Language Committee (ECPLC). Another colleague from SoLL, Professor Linda Kwatsha, is also currently a member of the ECPLC.

One of Afrikaans and Netherland's Masters students attended the "Taalunie Zomercursus Nederlands - taal, cultuur en beroep", an international Dutch language and culture summer school hosted by the Dutch Language Union in Ghent, Belgium. This is the third year in a row that students from our section have participated in the event, which provides an important opportunity for them to work with fellow students from across the globe and be tutored by academics of international standing.

Rhodes University and Nelson Mandela University co-hosted the twentieth biennial national conference of the Afrikaans Literature Association (*Afrikaanse Letterkundevereniging*) at the South End Museum in Gqeberha August 2023. It was a successful conference celebrating diversity in Afrikaans language and literature not only on a national level, but also with international participation (this year from the UK, Namibia, Belgium and the Netherlands).

Dr Botha delivered a paper at the Afrikaanse Letterkunde Vereniging (Afrikaans Literature Association) conference on *Komvandaan* [Origins]. Paper Title: "*Lady Anne en Bientang gelees vanuit 'n postkoloniale perspektief*" [*Lady Anne and bientang read from a postcolonial perspective*], hosted by Rhodes University and Nelson Mandela University, South End Museum, Gqeberha, August 2023.

Chinese Studies

Chinese Studies students, **Amy Brandon**, **Kakia Ruth** and **Conjwa Karabo**, participated in the South African final of the 22nd Chinese Bridge Chinese Proficiency Competition for Foreign College Students organised by the Chinese Embassy in South Africa. Amy Brandon won the Third Prize, and Kakia Ruth and Conjwa Karabo won the Outstanding Prizes.

In November 2023, the Chinese Studies Section held a Youth Chinese Test (YCT), including YCT1 and YCT2, for learners from primary and secondary schools. Also in the same month, the Chinese Studies Section held a Chinese Proficiency Test, including HSK3, HSK4, HSK5 and HSKK Intermediate, for students from South Africa.

Our lecturers, associates and students engage in a wide array of research initiatives that not only uphold the university's vision but also strive to push the boundaries of linguistic scholarship.



Mr Kgabane Lengane after receiving the 'Young Linguist Award' award for 2023, seen here with the HoS for School of Languages and Literatures, Dr Bulelwa Nosilela.
Photo: School of Languages and Literatures.

Classical Studies

Classical Studies sent a delegation of seven (7) staff members and Postgraduate students (MA and PhD) to the 34th biennial conference of the Classical Association of South Africa in Cape Town, from 22nd to 25th November 2023. All delegates presented papers on their research. The conference is an opportunity for Postgraduate students in particular to meet Classicists from across the country and the Southern African region, and to receive feedback on their research from experts in a range of fields.

Dr Daniel Malamis attended an online symposium hosted by Bryn Mawr College in August 2023, to discuss the identification and interpretation of a newly discovered palimpsest from the monastery of St Catherine in Sinai, which contains substantial fragments of a lost 'Orphic' mythological poem.

French and Francophone Studies

In September 2023, the Section welcomed the visit of the Distinguished Professor Koutchoukalo Tchassim from University of Lomé / Togo and Chairperson of the Federation of African Universities: a well-known figure in gender studies in Africa.

As result of the section's collaboration with the French Embassy in South Africa, one of the section's Honours students, **Ms Emily Platt** received a full bursary for linguistic training in Nice (France) from the 4th to the 15th of December 2023.

The French and Francophone Studies Section also sent the Teaching Assistant, **Sasha Kabwato**, to France in Vichy / Cavilam (one of the biggest institutions for teaching French as a foreign language in the world) to enhance her teaching and learning methodologies.

Professor Arthur Mukenge's book *Les personnages dans le jeu de l'engagement littéraire*, was published at L'Harmattan in France, and launched in December 2023.

Professor Patrice Mwepu with a team of Rhodes University lecturers went to Lubumbashi in Democratic Republic of Congo for an international gathering and conference at the University of *Les Nouveaux Horizons*.

German Studies

Colleagues from the German Studies section participated in research activities related to German foreign language teaching and learning, and teaching and learning in higher education. **Professor Undine Weber** was invited by DAAD to attend a workshop in Stellenbosch in May which aimed to evaluate the current and future position of German Studies in Sub-Saharan Africa.

In June 2023, Professor Weber was invited to attend the TAU (Teaching Advancement at University) National Conference in Durban as a TAU fellow from the 2015/ 2016 cohort. Professor Weber also engaged with research in the field of German literature in November 2023 when she traveled to Sydney, Australia, to present a paper on Wolfgang Koeppen's novels as aesthetic resistance against the impact of National Socialism at the GSAA (German Studies Association of Australia). Professor Weber continues to serve as co-editor of the accredited journal *Acta Germanica*.

Dr Natasha Engelbrecht presented a paper at the annual international MATSDA (Materials Development Association) conference in Rufina, Italy, which focused on consequences of prescribing GFL (German Foreign Language) textbooks aligned with the CEFR (Common European Framework of References) in a South African context. In a practical exercise related to the localisation of GFL teaching materials, Dr Engelbrecht was invited by Hueber publishers, the Goethe Institut and the German Foreign Ministry to contribute a chapter set in Johannesburg of the textbook *Und jetzt WIR* (ISBN: 9783192018633), aimed at school children in Sub-Saharan Africa.

Languages and Literatures

Books/Chapters/Monographs

Engelbrecht, N.

Engelbrecht, N. (2023) Kapitel 8: Viel Spaß! In: Nanga-Me-Abengmoni, Léonel (ed.). *Und jetzt WIR: Kursbuch für Jugendliche*. Germany: Hueber, Goethe Institut, foreign ministry of the Federal Republic of Germany. p.133-152. ISBN: 9783192018633.

Mukenge, A.N.

Mukenge, A.N. (2023) *Les personnages dans le jeu de l'engagement littéraire*. Paris : L'Harmattan . ISBN: 9782336415172.

Nkomo, D.

Nkomo, D. and Nhongo, R. (2023) Defying Regime Changes and New Dispensations: The Entrenchment and Continuity of English Hegemony in Zimbabwe. In: Akinlotan, M. (ed.). *Englshes in Africa*. New York: Peter Lang. p.9-26. ISBN: 9781433192869.

Hendricks, M. and Nkomo, D. (2023) The Institutionalization and Integration of English in a Multilingual South African Context. In: Akinlotan, M. (ed.). *Englshes in Africa*. New York: Peter Lang. p.75-98. ISBN: 9781433192869.

Nosilela, B.B., Nkomo, D. and Kaschula, R.H.

Nosilela, B.B., Nkomo, D. and Kaschula, R.H. (2023) A socio-political and historical perspective of linguistic prescriptivism in relation to African languages of South Africa. In: Beal, J.C., Lukac, M. and Straaijer, R. (eds.). *Routledge Handbook of Linguistic Prescriptivism*. p.321-337. ISBN: 9780367557843.

Peer Reviewed Non-Subsidy-Earning Journal Research Publications

Mambambo, J.

Mambambo, J. (2023) From Decolonising the Mind to Kutapanura Pfungwa Dzakatapwa: A Translators Experience. *Journal for Translation Studies in Africa*. 4 (2023). p.1-19.

Mona, G.V.

Mona, G.V. (2023) Celebrating 200 Years of isiXhosa in Writing and in Printing. In: *Imbiza Journal for African Writing* Vol 1 Issue 6. August 2023. p. 94-99. <https://www.imbizajournal.co.za/publication-features/>

Peer Reviewed Subsidy-Earning Journal Research Publications

Abubakari, H.

Abubakari, H., Issah, S.A., Acheampong, S.O., Luri, M.D. and Napari, J.N. (2023) Mabia languages and cultures expressed through personal names. *International Journal of Language and Culture*. 10 (1). p.87-114.

Abubakari, H. and Issah, S.A. (2023) Nominal classification in Mabia languages of West Africa. *Language Sciences*. 95 (2023). p.1-18.

Issah, S.A., Abubakari, H., Atintono, S. and Atibiri, S. (2023) Exploring Euphemisms as Taboo Avoidance Strategies in the Mabia Languages. *Language Matters*. 54 (2). p.42-64.

Lambert, M.

Lambert, M. (2023) The Sacred power of fat and honey in San and ancient Greek myth and ritual. *Akroterion*. 67 (1). p.101-116.

Mambambo, J.

Gwekwerere, T., Mambambo, J., Magidi, M. and Marongedze, R. (2023) Patriot, Revolutionary and Liberator? Representations of Emmerson Mnangagwa in the Post-2017 Chief Shumba Hwenje Song. *Journal of Asian and African Studies*. 2023 (2023). p.1-18.

Maseko, B.

Maseko, B. (2023) Inclusive Online Learning during a Crisis: Voices of Marginalised Rural University Students in Zimbabwe. *Alternation*. 41 (2023). p.595-619.

Mwepu, P.K.

Mwepu, P.K. (2023) Alix, Florian. 2022. Lessai postcolonial. Poétique



Baqonde delegates from left to right: Professor Bassey (UWC), Professor Nkomo (Rhodes), Dr Joubert (Groningen University, Netherlands), Dr Nosilela (Rhodes), Professor Hlongwa (UKZN), Dr Buthelezi (UKZN) and Dr Van Deventer (NWU).

Photo: School of Languages and Literatures.

de lentreglose. *French Studies In Southern Africa*. 53 (1). p.238-242.

Ntombolwana, Z.Q.

Knowles, C.R., Babeli, N.Q.E., Ntlokwana, A., Ntombolwana, Z.Q. and Sobuza, Z.Z. (2023) The politics of knowledge in South African universities: Students' perspectives. *Transformation in Higher Education*. 8 (2023). p.1-9.

Schafli, S.L. and Weber, U.S.

Schafli, S.L. and Weber, U.S. (2023) The Use of Stereotypes within South African Television Car Advertising using the German Language: A Multimodal Social Semiotic Approach. *Stellenbosch Papers in Linguistics Plus / SPIL Plus*. 66 (1). p.229-251.

Van Schoor, D.J.

Van Schoor, D.J. (2023) For an African *elenchus*: colonial and postcolonial misprisions and Classics in Africa. *Bulletin of the Institute of Classical Studies*. 65 (1). p.55-66.

Weber, U.S.

Weber, U.S. (2023) Buchbesprechung: Claus Altmayer, 2023. *Kulturstudien. Eine Einführung für das Fach Deutsch als Fremd- und Zweitsprache*. Berlin, J.B. Metzler. *Acta Germanica, German Studies in Africa*. 51 (1). p.233-234.

Weber, U.S. (2023) Co-Editor of this Journal. *Acta Germanica, German Studies in Africa*. 51 (1). p.1-237.

Wolff, H.E.

Wolff, H.E. (2023) Historical sound changes in Central Chadic (Afroasiatic). *Brill's Journal of Afroasiatic Languages and Linguistics*. 15 (2). p.349-432.

Peer-reviewed Proceedings

Mini, B.M.

Mini, B.M. A Critical Examination of the Greater Dictionary of IsiXhosa's Adequacy as a Source of Standard for the Language, Using the General Theory of Lexicography. *African Association for Lexicography, 27th International Conference*. University of Free State, Bloemfontein. South Africa. September 2023.

Mukenge, A.N.

Mukenge, A.N. Attributs surnaturels épiques et éléments de croyances animistes. *Colloque International de Lomé*. Université de Lomé, Lomé. Togo. April 2023.

Nkomo, D.

Nkomo, D. The Feasibility of Developing and Using isiXhosa Cytology Terminology in Higher Education: A Case Study at the University of Fort-Hare. *African Association for Lexicography, 27th International Conference*. University of Free State, Bloemfontein. South Africa. September 2023.

Nkomo, D. National Lexicography Units: A Critical Appraisal of Achievements and Challenges. *African Association for Lexicography, 27th International Conference*. University of Free State, Bloemfontein. South Africa. September 2023.



Professor Patrice Mwepu with a team of Rhodes university lecturers went to Lubumbashi in Democratic Republic of Congo for an international gathering and conference at the University of Les Nouveaux Horizons.

Photo: School of Languages and Literatures.

Research Papers Presented at Academic/Scientific Conferences (Non-peer-reviewed Proceedings)

Botha, M.

Botha, M. Invited participant. English National Language Body (ENLB) of the Pan South African Language Board (PanSALB). *Panel discussion on "English in South/ern Africa - past and present"*. Amazwi National Museum of Literature in Makhandla. February 2023.

Botha, M. Lady Anne en Bientang gelees vanuit 'n postkoloniale perspektief [Lady Anne and Bientang read from a postcolonial perspective]. *Afrikaanse Letterkunde Vereniging (Afrikaans Literature Association) conference*. Hosted by Rhodes University and Nelson Mandela University, South End Museum, Gqeberha. August 2023.

Engelbrecht, N.

Engelbrecht, N. When cultures of performativity do not align German foreign language learning at a South African university. *MATSDA (Materials Development Association)*. Villa Poggio Reale, Rufina. Italy. June 2023.

Kwatsha, L.L.

Kwatsha, L.L. Ubunzululwazi bokucupha nokutsala imbaliso kuncwadi lwesiXhosa olungobugilamkhuba (*Forensic science and plot delay in isiXhosa crime fiction*). *24th International Conference of the African Languages Association of Southern Africa*. Tshwane University of Technology, hosted at Birchwood Hotel Boksburg, Gauteng. South Africa. 26 - 29 September 2023.

Maseko, D. and Nkomo, D.

Maseko, D. and Nkomo, D. Family language policy in a xenophobic context: the case of Kalanga transnational families in South Africa. *CCERBAL 2023 Conference*. University of Ottawa, Ottawa. Canada. May 2023.

Maseko, D. and Nkomo, D. Power to the minorities: Ndebele L1 speaking teachers in Tonga-speaking communities in Zimbabwe. *33rd West African Linguistic Congress (WALC)*. University of Ghana, Accra. Ghana. October 2023.

Mazwi, N.R.M., Johnson, S. and Molubo, R.G.

Mazwi, N.R.M., Johnson, S. and Molubo, R.G. Umfazi wePhepha, Umfazi wesiNtu: The Chronicles of the law of marriage kwaXhosa as depicted in Mothlabane's Iinkunzi Ezimbini. *24th International Conference of the African Languages Association of Southern Africa*. Tshwane University of Technology, Pretoria. South Africa. September 2023.

Mazwi, N.R.M., Molubo, R.G. and Johnson, S. Justifying the introduction and visibility of tone signs in the teaching of reading isiXhosa L2 to non-mother tongue students. *24 International Conference of the African Languages Association of Southern Africa*. Tshwane

University of Technology, Pretoria. South Africa. September 2023.

Mona, G.V.

Mona, G.V. Workshop on establishment of a University Language Centre. *African Languages Association of Southern Africa*. Tshwane University of Technology, Pretoria. South Africa. September 2023.

Mukenge, A.N.

Mukenge, A.N. Le rapport entre le surnaturel épique et les croyances animistes. *Conférence Internationale de Lomé*. Université de Lomé, Lomé. Togo. April 2023.

Mukenge, A.N. A reflection on French Language Teaching and the place of Evaluation in a previously disadvantaged multicultural setting: a case study of Rhodes University, South Africa. *International Conference of Beijing*. Beijing Foreign Studies University, Beijing. China. November 2023.

Mwepu, P.K.

Mwepu, P.K. Accessing the Invisible through the Eye of the Artist. The Idealism of seeing things. *RASC Seminar Series*. Rhodes University, Grahamstown. South Africa. August 2023.

Mwepu, P.K. Space and its Representation in African Literature and Art. *Reconfiguring African Studies through Spatialities*. University of Bayreuth, Bayreuth. Germany. October 2023.

Mwepu, P.K. Rapatriement symbolique ou l'appropriation d'une identité perdue. La littérature au secours de la politique. *Repatriating Africa: Old Challenges and Critical Insights*. New Horizons University, Lubumbashi. Democratic Republic of Congo. October 2023.

Mwepu, P.K. Figures féminines et pouvoir de création et d'unification. Étude de quelques cas. *Figures féminines et formes de pouvoir dans les littératures francophones du Sud global*. University of Cape Town, Cape Town. South Africa. November 2023.

Nkomo, D.

Nkomo, D. Beyond policies: considering bottom-up multilingual pedagogical practices in South African higher education. *33rd West African Linguistic Congress (WALC)*. University of Ghana, Accra. Ghana. October 2023.

Lengane, K. and **Nkomo, D.** Intellectualisation of Africans Languages: Interrogating the Political Will in the Context of Global Forces. *Southern African Applied Linguistics and Applied Language Studies*. Walter Sisulu University, Mthatha. South Africa. July 2023.

Nkomo, D. Beyond Policies Bottom-Up Multilingual Pedagogical Practices in South Africa Higher Education. *International Symposium: Multilingualism in South Africa*. Trinity College Dublin, Dublin. Ireland. July 2023.

Nosilela, B.B.

Nosilela, B.B. Towards an understanding of teaching grammar to native speakers of African languages. *Southern African Linguistics and*



The SARCHI Chair for the Intellectualisation of African Languages, Multilingualism and Education, Professor Dion Nkomo presented an inaugural lecture on 12 September, entitled, 'Words in the Way: Confronting and Overcoming Linguistic Prejudice'.

Photo: School of Languages and Literatures.



Attending Professor Nkomo's inaugural lecture, from left to right: Dr Gambushe (UCT - former Professor Nkomo's student), Ms Mbungwana (ALS Teaching Assistant), Professor Nkomo, Ms Mawonga (Chertl), Professor Maseko (NMMU - Dean of Humanities), Ms Sisulu (Human Rights Activist and Executive Director of Puku Children's Literature Foundation).

Photo: School of Languages and Literatures.

Applied Linguistics Society. Walter Sisulu University, Umthatha. South Africa. July 2023.

Ouma, M.O.

Ouma, M.O. When the Longer Route Leads to the Point: Circumlocution as a Strategy in the Reproductive Health Clinic. *24th International Conference of the African Languages Association of Southern Africa*. Tshwane University of Technology, Pretoria. South Africa. September 2023.

Thondhlana, M.

Thondhlana, M. Community Engagement and the Language Question: A Case Study at Rhodes University. *10th SAERA Conference*. University of Fort Hare, East London. South Africa. October 2023.

Weber, U.S.

Weber, U.S. German Studies at Rhodes University, South Africa. Invited participant. *DAAD conference and workshop: Bestandsaufnahme und Perspektiven der Germanistik und Deutschförderung in Sub-Sahara Afrika*. Devon Valley, Stellenbosch. South Africa. May 2023.

Weber, U.S. Invited Participant. *TAU (Teaching Advancement at University) National Conference*. Elangeni Hotel, Durban. South Africa. June 2023.

Weber, U.S. Ästhetischer Widerstand gegen die Auswirkungen des Nationalsozialismus: Die anhaltende Aktualität von Wolfgang Koeppens Romanen. *German Studies Association of Australia (GSAA)*. University of Sydney, Sydney. Australia. November 2023.

DEPARTMENT OF Sociology and Industrial Sociology



Professor Gilton Klerck
Head of Department

Introduction

The Department of Sociology and Industrial Sociology has had another successful year in terms of research output and Postgraduate throughput. While all staff members and associates contributed to this success, special mention must be made of the outstanding contribution to the Department's research output by Professor Kirk Helliker, who authored two (2) chapters, three (3) journal articles, and co-edited three (3) books. The academic staff in the Department continued their extraordinary higher degree supervision record with twenty-nine (29) Postgraduate students graduating in 2023.

Postgraduates / Graduations

Fifteen (15) Honours students, ten (10) Masters students, and four (4) PhD candidates graduated in 2023. The range of topics covered in the different dissertations and theses from Honours to PhD level testifies to the multiple areas in which the discipline is engaged and in which the Department has supervisory capacity. The PhD topics of those who graduated in 2023, for instance, included a comparative analysis of land, labour and gender in a communal area and fast track farm in Zvimba rural district, Zimbabwe; women's economic empowerment and small-scale gold miners in Bubi and Gwanda Districts, Matabeleland, Zimbabwe; the use and value of support systems for people living with HIV/AIDS in Makhanda; and mega-churches and the neo-pente-costalisation of South Africa's black middle class.

Distinguished Visitors / International Visits

- **Professor Sonwabile Mnwana** was awarded an Honorary Fellowship at the Centre of African Studies, School of Social and Political Science, University of Edinburgh (UK) - 2023-2025. This Fellowship is in recognition of his research and academic stature. His research project on 'Wool value chains and emerging patterns of agrarian accumulation on communal land' is also funded through the University of



Dr Lalitha Naidoo (centre), a Research Associate in the Department, interviewing workers on a citrus farm in the Sundays River Valley.
Photo: Department of Sociology and Industrial Sociology.

Edinburgh Catalyst Non-Residential Fellowship Grant. As part of this Fellowship, Professor Mnwana visited the Centre of African Studies, University of Edinburgh in March-April 2023. During this visit, he presented a seminar, gave a lecture to MA students and worked on the wool research.

- Professor Sonwabile Mnwana's new co-edited book '*Critical Engagement with Public Sociology: A Perspective from the Global South (2022)*' was selected as one of the six best books by sociologists to be discussed at the Author Meets Critic sessions at the XX ISA Congress of Sociology in Melbourne, Australia, June 2023. The session took place on Monday 26 June 2023. Leading sociologists Professor Michael Burawoy (who also contributed a chapter in the book) and the '*Critic*'; Professor Sari Hanafi (President of the International Sociological Association [ISA]) provided excellent reviews of the book. (Link to the event: <https://isaconf.confex.com/isaconf/wc2023/meetingapp.cgi/Session/18564>).
- In May 2023, the Department of Sociology hosted Dr Andrew Bowman (University of Edinburgh), who is our new Senior Research Fellow. He co-presented a seminar (with Professor Mnwana) titled '*Accumulation from below in South Africa's wool industry: social differentiation and the prospects for inclusive value chain development in communal sheep farming*' on 24 May 2023.

Significant Research Aligned Events

The three (3) research entities attached to the Department continued to make a significant contribution to its profile and outputs. The Eastern Cape Agricultural Research Project

(ECARP) and the Institute for Economic Justice (IEJ) at the University of the Witwatersrand produced a working paper on the just transition in food systems with reference to South Africa's beef sector. The paper is based on field research conducted in the Eastern Cape in 2023 as well as a desktop study on cattle farming nationally. A policy brief is being developed for circulation.

ECARP also established two (2) research partnership agreements: the first with Memorial University's Queen's College in Canada to examine labour and tenure audits in the citrus sector in the Eastern Cape. The ECARP team is collaborating with Professor Lincoln Addison on this research, which will continue until December 2025. The second research project is with Dr Atenchong Talleh Nkobou from the Royal Agricultural University in Glasgow, which has assembled a team of researchers and community land activists from the United Kingdom, South Africa, and Tanzania. Titled *Reversing the Gaze: Knowledge stories and the Struggles for Community Land Rights*, the research entails a comparative study of land struggles in Scotland and Southern Africa. Dr Lalitha Naidoo, the director of ECARP, is a member of the research team whose work will continue until 2026.

The Neil Aggett Labour Studies Unit (NALSU) undertook extensive research and policy work, as well as public engagements and popular education. The unit's social media and press footprint, networks and partnerships, have expanded.

NALSU's **Dr Laura Alferts** continued her work on social protection for informal sector workers, with WIEGO (Women in Informal Employment: Globalising and Organising). **Dr Lali Naidoo**, NALSU member and director of the East Cape

Agricultural Research Project (ECARP), continued research with and on farm workers, farm dwellers and small-scale farmers. Kanyiso Ntinkina submitted his PhD on agrarian political economy, based on ground-breaking research. **Professor Jen Snowball** continued to host the South African Cultural Observatory (SACO), and spent two months at King's College London as a Global Visiting Fellow, hosted by the African Leadership Centre. A major outcome was a successful proposal to ARUA/The Guild Cluster of Research Excellence, on "Creative Economies: Cultures, Innovation and Sustainability." The lead partners are Rhodes University, King's College London, and the University of Lagos.

NALSU's work on labour markets saw **Professor Mike Rogan** as Rhodes' lead for an ongoing research programme into technical and vocational education and training. He wrapped up a project, commissioned by the Department of Employment and Labour to work with the National Minimum Wage Commission, on the earnings threshold. Professor Rogan, an invited expert at the G20 Labour Summit and the UN-Women Expert Group, has begun a new project with the Department of Employment and Labour on the measurement of earnings differentials.

NALSU's labour history project saw **Professor Lucien van der Walt** and **Mike Ntutela** working with veterans of the former South African Allied Workers Union (SAAWU), to create an online archive of primary and secondary sources. NALSU, working with Technical Services at Rhodes University, and the Labour Research Service (LRS) in Cape Town, has digitised a huge collection of primary sources on, and by labour movements, based on the LRS archives. NALSU's Professor Nicole Ulrich, based at the University of Fort Hare, is coordinating the Unit's "Labouring Lives Oral History Project." This includes research on Vuyisile Mini, trade unionist and *Umkhonto weSizwe* commander, led by **Ncebakazi Makwetu**.

NALSU continued its popular Labour Studies Seminar programme, based on blended events, linking to the Unit's ongoing series of podcasts and videos. Two (2) major books on labour history were launched: **Danelle van Zyl-Hermann's** *Privileged Precariat: White Workers and South Africa's Long*

Transition to Majority Rule, partnering NALSU and UKZN Press; and *Labour Struggles in Southern Africa, 1919-1939: New Perspectives on the Industrial and Commercial Workers' Union (ICU)* at a major public event, partnered with HSRC Press and the Vuyisile Mini Workers School. The latter book was co-edited by NALSU's Professor van der Walt.

NALSU members contributed to the press, as well as to a range of popular and other education programmes. Professor Rogan is part of the United Nations University World Institute for Development Economics Research MOOC on Decent work and Economic Growth: Achieving SDG 8. Professor van der Walt is centrally involved in the new Global Labour University (GLU) MOOC on labour history. Funding has been generously renewed for four (4) more years by the merSETA for the NALSU-run multi-year Rhodes certificate programme in "Policy, Theory and Research for Labour Movements" for trade unionists.

The Unit's annual Vuyisile Mini Workers School, which is partnered with the Frederic-Ebert-Stiftung (FES), was a resounding success. It hosted NALSU's annual Neil Aggett Labour Studies Lecture, attended by over 100 people, and addressed by Andrew Murray on "Why has South Africa's Industrial Policy Failed to Halt Deindustrialisation and Transform the Economy?" The School was attended by delegates from the four (4) main union federations, the *Phakamani Siyephambili* farmworkers movement, the Independent Khomani Residents Association (IKORA), and the sons of Mini.

The Unit of Zimbabwean Studies (UZS) under **Professor Kirk Helliker's** leadership remains research active and continues to make an important contribution to the Department's research profile. Besides the research publications of Professor Helliker and the Department's Research Associates falling within the Unit, one PhD student completed her thesis on land, labour and gender in rural Zimbabwe. Professor Helliker formalised his relationship with the Public Policy and Research Institute of Zimbabwe based in Bulawayo, focusing on civil society, democratisation and policy formation in Zimbabwe. He initiated a book project on civil society in Matabeleland, to be published in early 2025. He also undertook research on fishing practices amongst small-scale fishers in and along Kariba Dam in western Zimbabwe.



Fieldwork trip to Lake Kariba, Zambia by Professor Kirk Helliker.

Photo: Department of Sociology and Industrial Sociology.

Sociology and Industrial Sociology

Books/Chapters/Monographs

Bhatasara, S. and Chiweshe, M.K.

Bhatasara, S. and Chiweshe, M.K. (2023) Human rights implications of COVID-19 responses in Africa: exploring African women's intersectional experiences of sexual and gender based violence. In: Budoo-Scholtz, A. and Johnson, A. (eds.). *COVID-19 and women's intersectionalities in Africa*. Pretoria: Pretoria University Law Press. p.85-114. ISBN: 9781776411757.

Bhatasara, S. and Chiweshe, M.K. (2023) The impact of the Maputo Protocol in Zimbabwe. In: Mutambasere, S., Budoo-Scholtz, A. and Murden, D. (eds.). *The impact of the Maputo Protocol in selected African states*. Pretoria: Pretoria University Law Press. p.293-310. ISBN: 9781776448401.

Chiweshe, M.K.

Chiweshe, M.K. (2023) Indigenous water governance systems in a post-colonial state: insights from Zimbabwe. In: Basu, M. and DasGupta, R. (eds.). *Indigenous and local water knowledge, values and practices*. Singapore: Springer Nature Singapore. p.161-175. ISBN: 9789811994050.

Chiweshe, M.K. (ed.) (2023) *Football, gambling, and everyday life in Zimbabwe*. London: Routledge. ISBN: 9781032578866.

Helliker, K.

Helliker, K. and Matanzima, J. (2023) Contextualising Tonga Lives and Livelihoods in Zimbabwe. In: Helliker, K. and Matanzima, J. (eds.). *Tonga livelihoods in rural Zimbabwe*. London: Routledge. p.1-22. ISBN: 9781032244327.

Pophiwa, N., Matanzima, J. and Helliker, K. (ed.) (2023) *Lived experiences of borderland communities in Zimbabwe: livelihoods, conservation, war and Covid-19*. Netherlands: Springer. ISBN: 9783031321948.

Moyo, G. and Helliker, K. (ed.) (2023) *Making politics in Zimbabwe's second republic: the formative project by Emmerson Mnangagwa*. New York: Springer. ISBN: 9783031301285.

Helliker, K. and Matanzima, J. (ed.) (2023) *Tonga livelihoods in rural Zimbabwe*. London: Routledge. ISBN: 9781032244327.

Helliker, K., Bhatasara, S. and Chiweshe, M.K.

Helliker, K., Bhatasara, S. and Chiweshe, M.K. (2023) Land lobbying and mobilisation: civil and uncivil society in the 1990s in Zimbabwe. In: Gromping, M. and Teets, J.C. (eds.). *Lobbying the autocrat: the dynamics of policy advocacy in nondemocracies*. USA: University of Michigan Press. p.246-265. ISBN: 9780472055906.

Mathekga, J.M.

Mathekga, J.M. (2023) Political Economy of Foreign Direct Investments in Africa: Critical Reflections. In: Iloh, E.C., Aniche, E.T. and Azom, S.N. (eds.). *African Political Economy in the Twenty-First Century: Theories, Perspectives, and Issues*. London: Lexington Books. p.293-307. ISBN: 9781666930351.

Ngoma, A.L.

Ngoma, A.L., Mohamed, S. and Baloyi, B. (2023) Introduction. In: ngoma, A.L., Mohamed, S. and Baloyi, B. (eds.). *The Evolving Structure of South Africa's Economy: Faultlines and Futures*. Johannesburg: MISTRA. p.1-21. ISBN: 9781920690397.

Ngoma, A.L. and Ngcaweni, B. (2023) Binding Constraints to Decision-Making on Growth: Perspectives from Heads of Departments. In: ngoma, A.L., Mohamed, S. and Baloyi, B. (eds.). *The Evolving Structure of South Africa's Economy: Faultlines and Futures*. Johannesburg: MISTRA. p.469-505. ISBN: 9781920690397.

Ngoma, A.L., Mohamed, S. and Baloyi, B. (2023) Conclusion: Getting to Inclusive Growth and Sustainable Development. In: ngoma, A.L., Mohamed, S. and Baloyi, B. (eds.). *The Evolving Structure of South Africa's Economy: Faultlines and Futures*. Johannesburg: MISTRA. p.544-560. ISBN: 9781920690397.

Ngoma, A.L., Fine, B., Ashman, S., Vilakazi, T., Bosiu, T., Bell, J., Das Nair, R., Baker, L., Burton, J., Hirsch, A., Di Paola, M., Castel-Branco, R., Sefalafala, T., Swilling, M., Callaghan, N., McCallum, W., Adelzadeh, A., Cawe, A., Baloyi, B., Gqoli, M., Gobhozi, N., Malabela, M.H., Mohamed, S., Mukandila, A., Ngcaweni, B., Netshitenzhe, J., Omar, Y.A. and Rakabe, E. (ed.) (2023) *The Evolving Structure of South Africa's Economy: Faultlines and Futures*. Johannesburg: MISTRA. ISBN: 9781920690397.

Van Der Walt, L.

Van Der Walt, L. (2023) Fragmented Labour Movement, Fragmented Labour Studies: Mapping Some New Directions for Research and Theory. In: Tshoaedi, M., Bischoff, C. and Bezuidenhout, A. (eds.). *Labour Disrupted: Reflections on the Future of Work in South Africa*. Johannesburg: Wits University Press. p.15-48. ISBN: 9781776148226.



Sociology Master's dissertation writing retreat.

Photo: Department of Sociology and Industrial Sociology.

Concerts, Exhibitions, Performances, Workshops, Events

Van Der Walt, L.

Van Der Walt, L. Presenter. ESKOM Crisis: Is there Still a Place for Public Ownership? *Panel/debate on ESKOM Crisis: International Labour Research and Information Group (ILRIG)*. Cape Town. Online, Cape Town. South Africa. 2 March 2023.

Van Der Walt, L. Presentation. Are we Coming to the End of Neo-liberalism? BRICS, National-Populism, and Left Crisis. *Vuyisile Mini Workers School, Neil Aggett Labour Studies Unit (NALSU)*. Graham Hotel, Makhanda. South Africa. 13 November - 17 March 2023.

Van Der Walt, L., Rogan, M., McGregor, W., Hattings, S., Jara, M., Fryer, D., Mhlana, S. and Ntutela, M.M. Design, facilitation, presentation. "The Labour Movement and the State of the State". *Vuyisile Mini Workers School, Neil Aggett Labour Studies Unit (NALSU)*. Graham Hotel, Makhanda. South Africa. 13 - 17 November 2023.

Van Der Walt, L. Presentation. Yes, South Africa is Facing a Fiscal Crisis, and Cannot Spend its Way Out. *Vuyisile Mini Workers School, Neil Aggett Labour Studies Unit (NALSU)*. Graham Hotel, Makhanda. South Africa. 13 - 17 November 2023.

Van Der Walt, L. Presentation. The State and Economic Transformation: From Policy Proposals to State Capacity. *Vuyisile Mini Workers School, Neil Aggett Labour Studies Unit (NALSU)*. Graham Hotel, Makhanda. South Africa. 13 - 17 November 2023.

Van Der Walt, L. Presentation. State-Owned Enterprises: ESKOM and State-Capitalism. *Vuyisile Mini Workers School, Neil Aggett Labour Studies Unit (NALSU)*. Graham Hotel, Makhanda. South Africa. 13 - 17 November 2023.

Van Der Walt, L. Presentation. Context: From Import-Substitution-Industrialisation (ISI) to Neo-liberalism. *Vuyisile Mini Workers School, Neil Aggett Labour Studies Unit (NALSU)*. Graham Hotel, Makhanda. South Africa. 13 - 17 November 2023.

Van Der Walt, L. Presentation. Why a Global History of Anarchism and Syndicalism? Launch event. Online, Athens School of Philosophy. Greece. 27 April 2023.

Peer Reviewed Non-Subsidy-Earning Journal Research Publications

Chiweshe, M.K.

Samugwede, M., Masunda, T.F. and **Chiweshe, M.K.** (2023) Livelihoods on the move under COVID-19 restrictions in Zimbabwe. *Migration Policy Practice*. XII (2). p.55-60.

Sipungu, T.A.

Sipungu, T.A. (2023) Iron women dislodging provider masculinities? Why Connell's framework of Hegemonic Masculinities is useful but unhelpful. *Routledge Open Research*. 10 (2023). p.1-11.

Peer Reviewed Subsidy-Earning Journal Research Publications

Agbedahin, K.

Agbedahin, K. (2023) Beyond Paradoxes: The South African Military Involvement in the Fight against Covid-19. *African Histories and Modernities*. 1326 (2023). p.55-80.

Bhatasara, S.

McAllister, G., **Bhatasara, S.**, Claeys, P., Lemke, S., McKinnon, K. and Moeller, N.I. (2023) Editorial: Participatory action research in a time of COVID and beyond. *Frontiers in Sustainable Food Systems*. 7 (2023). p.1-3.

Chopera, P., Matsungu, T.M., Manditsera, F.A., Mubaiwa, J., **Bhatasara, S.**, Kembo, G. and Macheke, L. (2023) Association between consumption of edible insects with dietary diversity, and household food and nutrition security in Southern Zimbabwe. *African Journal of Food, Agriculture, Nutrition and Development*. 23 (4). p.1-19.

Chadambuka, P. and Helliker, K.

Chadambuka, P. and Helliker, K. (2023) Communal land and belonging among foreign farm workers in Zimbabwe. *African Studies*. 2023 (2023). p.162-180.

Chiweshe, M.K.

Chiweshe, M.K. and Hove, P. (2023) Intersectional analysis of women human rights defenders' lived experiences under COVID-19 lockdowns in Zimbabwe. *Gender and Development*. 31 (1). p.89-107.

Helliker, K.

Helliker, K. and Moyo, G. (2023) Mnangagwa's Formative Project: Risks and Limits. *Advances in African Economic, Social and Political Development*. (2023). p.1-21.

Moyo, G. and **Helliker, K.** (2023) Concluding Reflections on Change and Continuity. *Advances in African Economic, Social and Political Development*. 2023 (2023). p.263-270.

Matanzima, J., **Helliker, K.** and Pophiwa, N. (2023) Borders, Borderlands and Borderlanders. *Springer Geography*. (2023). p.1-25.

Jha, P.

Akrong, R., Akorsu, A.D., **Jha, P.** and Agyenim, J.B. (2023) Towards environmental sustainability: The role of certification in the adoption of climate-smart agricultural practices among Ghanaian mango farmers. *Cogent Food & Agriculture*. 9 (2023). p.1-24.

Jha, P. and Mishra, P. (2023) Changing World of Work and Rural Diversification. *Agrarian South: Journal of Political Economy*. 12 (4). p.399-430.

Makwetu, N.

Kalina, M., **Makwetu, N.** and Tilley, E. (2023) 'The rich will always be able to dispose of their waste': a view from the frontlines of municipal failure in Makhanda, South Africa. *Environment, Development and Sustainability*. 2023 (2023). p.1-24.

Mtwa, Z.A. and Roboji, P.M.

Knowles, C.R., James, A., Khoza, L.P., Mtwa, Z.A., Roboji, P.M. and Shivambu, M. (2023) Problematising the South African Higher Education inequalities exposed during the Covid-19 pandemic: Students' perspectives. *Critical Studies In Teaching and Learning (CriSTal)*. 11 (2). p.1-21.

Reynolds, J.

MacLeod, C.I., Reuvers, M.J., Reynolds, J., Lavelanet, A. and Delate, R. (2023) Comparative situational analysis of comprehensive abortion care in four Southern African countries. *Global Public Health*. 18 (1). p.1-11.

MacLeod, C.I., Reynolds, J. and Delate, R. (2023) Violence against women who sell sex in eastern and southern Africa: a scoping review. *Trauma, Violence and Abuse*. 25 (1). p.691-703.

Research Papers Presented at Academic/Scientific Conferences (Non-peer-reviewed Proceedings)

Van Der Walt, L.

Van Der Walt, L. Anarchism and Revolutionary Syndicalism in Africa. Kantine Festival 2023: Geschichte und Theorie des Anarchismus. *Subbotnik, Chemnitz*. Germany. August 2023.

Mnwana, S.

Mnwana, S. *Beyond the 'definition paradigm': Rethinking 'community' and mining-led conflict in rural South Africa*. WISER Seminar on Monday, 16 October, 2023. <https://wiser.wits.ac.za/content/beyond-%E2%80%98definition-paradigm%E2%80%99-rethinking-%E2%80%98community%E2%80%99-and-mining-led-conflict-rural-south>

Mnwana, S. *Rich 'kingdoms' and fragmented 'communities': Rethinking mining-led conflict in rural South Africa*. An expert address presented at the special workshop entitled, "Resource-rich traditional kingdoms and sustainable human development in Africa," which will be held at the University of the Witwatersrand's Humanities Seminar Room on 4 September 2023.

DEPARTMENT OF Statistics



Mr Jeremy Baxter
Head of Department



Introduction

The Department of Statistics continued pursuing a broad range of teaching and research interests and activities during 2023. The Department welcomed Mr Rakesh Bhurtun to the staff in June 2023.

Professor Lizanne Raubenheimer, Ms Amy Langston and Ms Kate Koch organised and managed the team of staff, Undergraduate and Postgraduate student volunteers involved in the annual Rhodes University Mathematics Winter School programme. The programme supports local Grade 12 learners from six (6) no-fee paying local schools. Lecturers and tutorials were presented on Statistics, Probability and Financial Mathematics, three topics in the curriculum that students typically struggle with.

Postgraduates / Graduations

Fifteen (15) students passed Mathematical Statistics 3; **Ms Fadzai Jimu** attained a distinction. Six (6) students graduated with a Bachelor of Science Honours and one (1) student graduated with a Bachelor of Business Science in Mathematical Statistics; **Ms Onwaba James** attained a distinction.

Mr Sikhakhane completed his Master of Science degree with distinction. His research focused on binary statistical classification with an application to credit default. Several traditional and more modern analytical routines were discussed and subsequently applied using extensive R script on an imbalanced data set. This research is of significance to the financial sector which continues to strive for better, quicker and more effective classification algorithms in an effort to minimize losses due to customer defaults.

Ms Matshaya completed her Master of Science degree. Her research focused on extreme value theory with applications in finance. She discussed relevant, modern analytical techniques and developed an extensive R script to assess Bitcoin returns. This thesis adds to the research on modeling excessive positive and negative tail volatility.

Mr Mbiva completed his Master of Science degree. His research focused on developing suspicious activity reports in an effort to enhance the detection of terrorist financing and suspicious transactions in migrant remittances. He described and imple-



Left: Rhodes University Mathematics Winter School 2023 team of volunteers.

Below: Professor Finkelstein and Ms Langston at the South African Statistical Association Conference, Durban. Ms Langston was awarded second prize in the Young Statistician Oral Competition. Photos: Department of Statistics.

mented two (2) unsupervised classifiers, a Structural Equation Model (SEM) and a Local-Outlier Factor-Isolation Forrest (LOF-IF) model, to detect suspicious transactions in migrant remittances that could be a way of financing terrorism. R was used to implement and assess the performance of these classifiers on a Belgium data set.

Distinguished Visitors / International Visits

Professor Lizanne Raubenheimer hosted Professor Tertius de Wet from Stellenbosch University on a research visit. Professor Raubenheimer visited Professor Wilson at Trinity College Dublin, Dublin, Ireland to continue their collaboration on cascading network failures.

Significant Research Aligned Events

Mr Jeremy Baxter represented the Department at the Quantify Your Future Skills Forum held in October 2023 in Sandton. Mr Jurie Schoeman and the BSG team discussed the BSG internship and graduate placement programs with the senior Undergraduate and Postgraduate students.

Associate Professor Gary Sharp, of the Department of Statistics at Nelson Mandela University, presented an interesting CoE-MaSS seminar on optimisation algorithms for single, multiple and mixed relay team selection in aquatics online to the South African Statistical Association, including the staff and Postgraduate students in the Department. Associate Professor Thron, of the Department of Science and Mathematics at Texas A&M University-Central Texas, presented a highly informative seminar entitled *A Bird's Eye Overview of Machine Learning* to the staff and Postgraduate students in the Departments of



Mathematics and Mathematical Statistics at Rhodes University. Dr Thron discussed the mathematical foundations of machine learning, and used practical examples to point out best practices as well as pitfalls in the use of machine learning in applications that relate to predictive models.

Dr Mark Glickman, Senior Lecturer in Statistics at the Harvard University Department of Statistics and Chair for the American Statistical Association's Committee on Data Science and Artificial Intelligence, presented an interesting seminar entitled *Rating Competitors in Games with Strength-dependent Tie Probabilities* to the staff and Postgraduate students in the Departments of Mathematical Statistics and Statistics at Rhodes and Nelson Mandela Universities at Nelson Mandela University. Dr Glickman discussed how rating systems for head-to-head games, for example chess, are used to measure playing strength for game outcomes. He detailed how rating systems are being developed that accommodate different probabilities of ties based on players prior ratings or strengths in time varying game outcomes following a Bayesian dynamic modeling framework.

Professor Raubenheimer and Dr Smit presented papers at the Mathematical Methods in Reliability and Games and Decisions in Risk and Reliability conferences in Spain.

Ms Langston presented a paper at Mathematical Methods in Reliability conference in Spain. Mr Hamlomo was awarded the best paper award at the SAFER-TEA conference in Cameroon. Mr Izally presented a paper at the virtual Bayesian Young Statisticians conference. Professor Raubenheimer, Ms Langston, Mr Izally and Mr Hamlomo presented papers at the annual South African Statistical Association conference in Durban where Ms Langston was awarded second prize in the Young Statistician Oral Competition. Professor Raubenheimer and Ms Langston presented a poster at the 2023 Community Engagement Learning Symposium at Rhodes University.

Ms Langston visited her supervisor Professor Finkelstein at the University of the Free State. She presented a seminar entitled *On Some Point Processes with Memory with Applications to Shock and Repair Modeling* to the staff and Postgraduate students at the University of the Free State. Mr Izally visited his co-supervisor Professor van der Merwe at the University of the Free State. Mr Izally, Mr Hamlomo and Ms Langston continue to make significant progress reading towards their PhDs.



The third year class of 2023 at Graduation.
Photos: Department of Statistics.



Ms Langston and Professor Raubenheimer at the Mathematical Methods in Reliability conference, Madrid. Spain. May 2023.

International Visits

Raubenheimer, L.

Raubenheimer, L. Trinity College Dublin, Dublin, Ireland. *Research in Cascading Network Failure*. 25 September - 6 October 2023.

Peer Reviewed Subsidy-Earning Journal Research Publications

Correa, F.M.

Ndehedehe, C.E.N., Ferreira, V.G., Adeyeri, O.E., Correa, F.M., Usmani, M.A., Oussou, F.E., Kalu, I., Okwuashi, O., Onojeghuo, A.O., Getirana, A. and Dewan, A. (2023) Global assessment of drought characteristics in the Anthropocene. *Resources, Environment and Sustainability*. 12 (2023). p.1-11.

Langston, A.F.

Langston, A.F., Finkelstein, M. and Cha, J.H. (2023) On the point process with finite memory and its application to optimal age replacement. *Proceedings of the Institution of Mechanical Engineers, Part O: Journal of Risk and Reliability*. (2023). p.1-11.

Finkelstein, M., Cha, J.H. and Langston, A.F. (2023) Improving classical optimal age-replacement policies for degrading items. *Reliability Engineering and System Safety*. 236 (2023). p.1-11.

Radloff, S.J.

Mcewan, K., Pote, L., Nicholls, S., Radloff, S.J. and Christie, C.J. (2023) The role of selected pre-match covariates on the outcome of One-day International (ODI) cricket matches. *South African Journal of Sports Medicine*. 35 (1). p.1-6.

Raubenheimer, L.

Smit, N., Raubenheimer, L., Mazzuchi, T. and Soyer, R. (2023) A Bayesian generalized Eyring-Weibull accelerated life testing model. *Quality and Reliability Engineering International*. 2023 (2023). p.1-16.

Raubenheimer, L. (2023) Discussion of "Specifying prior distributions in reliability applications". *Applied Stochastic Models in Business and Industry*. 2023 (2023). p.1-11.

Research Papers Presented at Academic/Scientific Conferences (Non-peer-reviewed Proceedings)

Hamlomo, S. and Baxter, J.

Hamlomo, S., Atemkeng, M.T., Baxter, J., Brima, Y. and Nunhokee, C.D. A Systematic Review on Local Low-Rank Approximation in Medical Imaging. *South African Statistical Association 2023*. Southern Sun Elangeni & Maharani Conference Venue, Durban. South Africa. January 2023.

Izally, S.R. and Raubenheimer, L.

Izally, S.R., Raubenheimer, L. and van der Merwe, A.J. Loss functions for Cronbach's coefficient alpha using a balanced random effects model. *The Bayesian Young Statisticians Meeting*. Virtual. November 2023.

Izally, S.R., Raubenheimer, L. and van der Merwe, A.J. Objective priors for Cronbach's coefficient alpha using a balanced random effects model. *The South African Statistical Association*. Southern Sun Elangeni & Maharani Conference Venue, Durban. South Africa. November 2023.

Langston, A.F.

Langston, A.F. and Finkelstein, M. A general multiple-repair-attempt process and its application to age replacement. *The 64th Annual Conference of the South African Statistical Association*. Southern Sun Elangeni & Maharani Conference Venue, Durban. South Africa. November 2023.

Langston, A.F., Finkelstein, M. and Cha, J.H. A combined worse than minimal and minimal repair model with applications to age replacement. *12th International Conference on Mathematical Methods in Reliability*. Universidad De Murcia, Murcia. Spain. May 2023.

Langston, A.F. and Raubenheimer, L.

Langston, A.F. and Raubenheimer, L. From a Community-Engaged Learning Project to Engaged Research. *2023 Community Engagement Learning Symposium. The Significance, Relevance and Impact of Higher Education Community Engagement for South Africa and the rest of Africa*. Amazwi South African Museum of Literature, Makhanda. South Africa. May 2023.

Raubenheimer, L.

Raubenheimer, L., Smit, N., Mazzuchi, T. and Soyer, R. A Bayesian dual-stress Weibull accelerated life testing model. *The 12th International Conference on Mathematical Methods in Reliability (MMR)*. Facultad de Matemáticas, Calle Campus Universitario, Murcia. Spain. May 2023.

Raubenheimer, L., Smit, N., Mazzuchi, T. and Soyer, R. A generalized Eyring-Weibull model in accelerated life testing. *The 7th Games and Decisions in Risk and Reliability (GDRR) conference*. Spanish Royal Academy of Sciences, Madrid. Spain. May 2023.



Left to right: Mr Hamlomo, Ms Langston, Professor Raubenheimer and Mr Izally at the South African Statistical Association Conference in Durban, South Africa.

Photo: Department of Statistics.

DEPARTMENT OF Zoology and Entomology



Professor Nicole Richoux
Head of Department

Introduction

The research performance by staff, students, and associates of the Department was exceptional during 2023! Our energetic researchers have represented Rhodes through one hundred and thirty-one (131) conference presentations at national and international meetings in Argentina, Belgium, Italy, Germany, Mexico, New Zealand, South Africa, Spain, and the United States. We hosted visitors from Argentina, Australia, Canada, France, and the USA.

Our publication record remains as strong as ever, with over one hundred and fifty (150) subsidy-earning journal articles, two (2) book chapters, and one (1) patent. Above and beyond the numbers and outputs, special connections were made among colleagues sharing a common goal of exploration in a complex and fascinating world. Discovery awaits!

Postgraduates / Graduations

We applauded the success of two (2) PhD, seventeen (17) Masters, and ten (10) Honours graduates. We are as proud as parents of all the students that we have had the pleasure of working with. They all deserve special mention, but I can include only a few in this small space:

Natanah Gusha, who was commended by an examiner for completing an extensive field study and combining modern data analyses (including fuzzy logic coding) within a robust framework of ecological theory in a thesis on the evaluation of community assemblage patterns and ecosystem functioning in intertidal systems using trait-based approaches.

Amy Hunter, whose thesis represents a first step towards understanding the role of gut microbiota in the thermal biology of two bat species.

Mafika Mabuza, whose thesis contributed to understanding of why biological control of water hyacinth does not always work.



A happy team after collecting cochineal in Hidalgo, Mexico.
Photo: I Paterson.

Esethu Nkibi, whose thesis highlighted the roles of phytoplankton and aquatic invertebrates in inland and coastal lakes, generally understudied ecosystems.

Perryn Richardson, whose thesis made strides to show the functional impact of microbiota on the thermal tolerance of the false codling moth.

Megan Reid, whose thesis made a significant contribution to the biological control of a water lily, the first water lily to be targeted globally.

Clarke van Steenderen, whose thesis made a substantial contribution to the application of modern molecular methods to evaluate prospective biological control agents such as *Eurytomid* wasps that specialise on African grasses.

Liam Yell, whose novel thesis investigated new research on the potential biological control of grasses.

Distinguished Visitors / International Visits

MSc student **Elihle Mankuntsu** was invited to spend several months in New Mexico as a participant in the environmental biology programme of Furman University (South Carolina, USA). Dr Nokubonga Mngqatsa spent time in New Mexico during this trip and hosted the Furman University students in the Eastern Cape for the African Biodiversity and Conservation exchange programme.

Staff and students from Dalhousie University, Canada, visited South Africa for the African Wildlife Ecology exchange program.

Professor James Ellis (Hugh Kelly recipient) and his PhD candidate **Kaylin Kleckner** visited from the Honey Bee Research

and Extension Laboratory in Gainesville, Florida, to complete research on natural honey bee populations.

Visiting Professor Martin Hausberger and Dr Lemasson from the Integrative Neuroscience and Cognition Center, France, visited to plan their collaborative project with **Professor Adrian Craig** and **Dr Nokubonga Mngqatsa** on the evolution of vocal communication: testing the impact of social systems, phylogeny, and conditions of life.

Nicolas Salinas, PhD candidate from Argentina, visited to work on the biological control of water hyacinth.

Greg Wheeler from USDA Fort Lauderdale visited to work on the biological control of African grasses.

Dr David Comben, Queensland Department of Agriculture and Forestry in Australia, visited to work on the biological control of African grasses.

MSc student **Wade Sexton** visited Mexico to look for new biological control agents for cacti.

Nompumelelo Baso from the CBC visited New Zealand to conduct research into the biological control of pondweed.

Significant Research Aligned Events

A new biological control agent for Delta Arrowhead was released by Vice Chancellor Sizwe Mabizela.

Two biopesticides, MultiMax and CodlMax, by River Bioscience were launched for commercial use in the fruit industry. These products are based on the PhD work of Rhodes graduates **Tamryn Marsberg** and **Michael Jukes**.

Zoology and Entomology

Books/Chapters/Monographs

Hill, M.P.

Moran, P.J., De Clerck-Floate, R., **Hill, M.P.**, Raghu, S., Paynter, Q. and Goolsby, J.A. (2023). Chapter 6: Mass-Production of Arthropods for Biological Control of Weeds: A Global Perspective. In: Morales-Ramos, J.A., Rojas, G.M. and Shapiro-Ilan, D.I. (eds.). *Mass-production of beneficial organisms. Invertebrates and Entomopathogens*. Second Edition. Elsevier, Academic Press, London, UK. p. 157-194. ISBN: 9780128221068.

Barnes, R. and Hodgson, A.

Barnes, R., Wooldridge, T. and **Hodgson, A.** (2023). Benthic and planktonic invertebrates of the Knysna Estuary. In: Whitfield, A.K., Breen, C. and Read, M. (eds.). *Natural Wonders of the Knysna Estuary - A Priceless Jewel in the Garden Route Crown*. Knysna Basin Project. p. 143-182. ISBN: 9780639768663.

Patents

Harris, J. and Villet, M.H.

Harris, J. and Villet, M.H. (2023) *Bee biovector dispenser*. South Africa. 2023. 2023/03918.

Peer Reviewed Subsidy-Earning Journal Research Publications

Aigbedion-Atalor, P.O.

Adom, M., Fening, K.O., Billah, M.K., **Aigbedion-Atalor, P.O.** and Wilson, D.D. (2023) Efficacy of selected biopesticides on key pests of chilli pepper for increased productivity in Ghana. *Crop Protection*. 176. p.1-11.

Barnes, R.S.K.

Barnes, R.S.K., Seath, J.L. and Arendse, C.J. (2023) Differential sampling in the assessment of conservation and biodiversity merit: a comparison of the seagrass macrofauna in three nearby South African estuaries. *Biodiversity and Conservation*. 33. P.509-532.

Barnes, R.S.K. (2023) Seagrass macrobenthic biodiversity does not vary in conformity with a leaky-lagoonal confinement gradient. *Marine Environmental Research*. 185. 105897. p.1-9.

Bernard, A.T.F.

Smit, K.P., **Bernard, A.T.F.**, Sink, K.J., Dyer, A.G. and Lombard, A.T. (2023) Identifying suitable indicators to measure ecological condition of rocky reef ecosystems in South Africa. *Ecological Indicators*. 154. p.1-11.

Faure-Beaulieu, N., Lombard, A.T., Olbers, J., Goodall, V., Da Silva, C., **Daly, R., Kock, A.A., Murray, T., Gennari, E., Bernard, A.T.F., Cowley, P.D., Elston, C. et al.** (2023) A systematic conservation plan identifying critical areas for improved chondrichthyan protection in South Africa. *Biological Conservation*. 284. p.1-11.

Ferreira, J.A., Alberts, J.A., Smith, K.G., **Bernard, A.T.F.**, Pereira, M.J. and De Vos, L. (2023) Seasonal changes characterise the shark and ray assemblages in a subtropical shallow sandy habitat in the iSimangaliso Wetland Park, South Africa. *PeerJ*. 11. p.1-11.

Bernard, K.M.T., Perry, T.W. and Mggqatsa, N.

Bernard, K.M.T., Perry, T.W. and Mggqatsa, N. (2023) Puma (Puma concolor) sex influences diet in southwest New Mexico. *Western North American Naturalist*. 83 (2). p.153-164.

Bernard, R.T.F.

Plon, S., Best, P.B., Duignam, P., Lavery, S.D., **Bernard, R.T.F.**, Van Waerebeek, K. and Scott Baker, C. (2023) Population structure of pygmy (Kogia breviceps) and dwarf (Kogia sima) sperm whales in the Southern Hemisphere may reflect foraging ecology and dispersal patterns. *Advances in Marine Biology*. 96. p.85-114.

Booth, J.M.

Booth, J.M., Fusi, M., Marasco, R. and Daffonchio, D. (2023) The microbial landscape in bioturbated mangrove sediment: A resource for promoting nature-based solutions for mangroves. *Microbial Biotechnology*. 16 (8). p.1584-1602.



M Khumalo and N Jeza sampling at Kowie River.

Photo: N Richoux.



Dr Micahel Jukes and Dr Tamryn Marsberg with the MultiMax and CodlMax biopesticides.
Photo: CBC.



Commercially sold bottles of MutiMax and CodlMax.
Photo: M Jukes.

Booth, J.M. and McQuaid, C.D.

Booth, J.M., Giomi, F., Daffonchio, D., **McQuaid, C.D.** and Fusi, M. (2023) Disturbance of primary producer communities disrupts the thermal limits of the associated aquatic fauna. *Science of the Total Environment*. 872. p.1-10.

Brigham, R.M.

Davis, S.K., Bogard, H.J.K., Kirk, D., Moretto, L. and **Brigham, R.M.** (2023) Grassland songbird abundance is influenced more strongly by individual types of disturbances than cumulative disturbances associated with natural gas extraction. *PLoS ONE*. 18 (3). p.1-16.

Brigham, R.M. and Wee, N.M.J. (2023) A career of bat research: informing and motivating bat conservation. *Canadian Journal of Zoology*. 101 (4). p.242-247.

Odon, A., Freire, C.A., **Brigham, R.M.**, Bordignon, M.O. and Monteiro-Filho, E.L.A. (2023) Brazilian sleeping beauty: First evidence of hibernation by a bat in South America. *Biotropica*. 55. p.573-578.

Preston, P.J. and **Brigham, R.M.** (2023) Influence of localized artificial light on calling activity of Common Poorwill (*Phalaenoptilus nuttallii*). *Journal of Field Ornithology*. 93 (3). p.1-6.

McKechnie, A.E., Freeman, M.T. and **Brigham, R.M.** (2023) Avian Heterothermy: A Review of Patterns and Processes. *Integrative and Comparative Biology*. 63 (5). p.1028-1038.

Canavan, K.

Goolsby, J.A., Moran, P.J., Jiminez, M.M., Yang, C., **Canavan, K.**, Paynter, Q., Ota, N. and Kriticos, D.J. (2023) Biology of Invasive Plants 4. *Arundo donax* L. *Invasive Plant Science and Management*. 16 (2). p.81-109.

Verlaque, R., Hardion, L., Lambertini, C., **Canavan, K.**, Verlaque, M., and Vila, B. (2023). New highlights on Old World giant *Phragmites* (Poaceae) using leaf and floral bract microscopic characters. *Aquatic Botany*. 184, 103591.

Canavan, K. and Martin, G.D.

Gwate, O., **Canavan, K.**, **Martin, G.D.**, Richardson, D.M. and Clark, V.R. (2023) Assessing habitat suitability for selected woody range-expanding plant species in African mountains under climate change. *Transactions of the Royal Society of South Africa*. 78 (1-2). p.87-101.

Canavan, K. and Paterson, I.D.

Canavan, K. and Paterson, I.D. (2023) Prioritization of alien plant targets for biological control in South Africa's offshore sub-Antarctic islands. *Antarctic Science*. 35(4). p.1-8.

Caputo, M.

Kiszka, J.J., **Caputo, M.**, Vollenweide, J., Heithaus, M.R., Dias, L.A. and Garrison, L.P. (2023) Critically endangered Rice's whales (*Balaenoptera ricei*) selectively feed on high-quality prey in the Gulf of Mexico. *Scientific Reports*. 13 (1). p.1-13.

Chikowore, G.

Nemaungwe, T.M., van Dalen, E.M.S.P., Waniwa, E.O., Makaya, P.V., **Chikowore, G.** and Chidawanyika, F. (2023) Biogeography of the theileriosis vector, *Rhipicephalus appendiculatus* under current and future climate scenarios of Zimbabwe. *Experimental and Applied Acarology*. 90. p.67-82.

Chikowore, G., Martin, G.D. and Hill, M.P.

Chikowore, G., Martin, G.D., Chidawanyika, F., **Hill, M.P.**, Nesor, S., Day, M., Grice, T., Chikwenhere, G., Mangosho, E. and Sheppard, A. (2023) Weed biological control in Zimbabwe: Challenges and future prospects. *South African Journal of Botany*. 154. p.336-345.

Claassens, L.

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Photo: N Mgqatsa.

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Rhodes University Vice-Chancellor, Professor S Mabizela, D Muir (DFFE) and G Martin releasing *L. appendiculatus* into Botanical Gardens.
Photo: K Weaver.

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Too much fun on the Zoology 2 field trip.

Photo: by N Richoux.

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Petruzzella, A., Motitsoe, S.N., Hill, M.P., Mancunga, L., Kolisi, S., Maneli, S., Mantshi, H.T., Mlungu, Z., Nkibi, E. and Coetzee, J.A.

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Petruzzella, A., Motitsoe, S.N., Tshithukhe, G., Hill, M.P. and Coetzee, J.A. Does native aquatic plant diversity recover after biological control of invasive floating plants? *XVI International Symposium on Biological Control of Weeds*. Puerto Iguazú, Misiones, Argentina, Puerto Iguazú. Argentina. May 2023.

Porri, F.

McConnachie, B. and Porri, F. From Global challenges to local solutions: how FAIR data, transdisciplinarity and innovation are sustainably shaping the marine research, management, communities and narratives of South Africa. *Sustainable Research and Innovation*

Congress. Nelson Mandela University, Gqeberha. South Africa. June 2023.

Reid, M.K., Hill, M.P. and Coetzee, J.A.

Reid, M.K., Hill, M.P. and Coetzee, J.A. Comparing the host specificity of a South African weevil and North American planthopper: the challenge of host specificity that is "just right" for management of *Nymphaea mexicana* (Nymphaeaceae) and its hybrids in South Africa. *XVI International Symposium on Biological Control of Weeds*. Puerto Iguazú, Misiones, Argentina, Puerto Iguazú. Argentina. May 2023.

Richardson, P.H.R., Terblanche, J.S. and Owen, C.A.

Richardson, P.H.R., Terblanche, J.S. and Owen, C.A. Impact of the gut microbiome on life history, body composition and stress resistance in False Codling Moth (*Thaumotibia leucotreta*). *23rd Congress of the Entomological Society of Southern Africa*. Stellenbosch University, Stellenbosch. South Africa. July 2023.

Richoux, N.B., Sikutshwa, L. and Moyo, S.

Richoux, N.B., Sikutshwa, L., Moyo, S. and Parker, D.M. Trophic ecology of anurans in a South African river identifies potential exporters of aquatic nutrients. *ASLO Aquatic Sciences Meeting*. Palma de Mallorca, Spain. January 2023.

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Sandenbergh, E. and Coetzee, J.A. Targeting *Iris pseudacorus* (Iridaceae) for biological control in South Africa, and beyond. *XVI International Symposium on Biological Control of Weeds*. Puerto Iguazú, Misiones, Argentina, Puerto Iguazú. Argentina. May 2023.

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Sandenbergh, E., Petruzzella, A. and Coetzee, J.A. Insight into the distribution, genetic diversity, and sexual reproductive capacity of *Iris pseudacorus* in South Africa: Implications for management. *National Symposium on Biological Invasions*. Houw Hoek Hotel, Western Cape. South Africa. July 2023.

Sexton, W.T., Paterson, I.D. and Muskett, P.C.

Sexton, W.T., Paterson, I.D. and Muskett, P.C. *Dactylopus tomenstosus* 'californica var parkeri' (Dactylopiidae): A successful biocontrol agent against *Cylindropuntia pallida* (Cactaceae) in Australia, but unsuccessful in South Africa. *23rd Congress of the Entomological Society of Southern Africa*. Stellenbosch University, Stellenbosch. South Africa. July 2023.

Smith, R., Coetzee, J.A. and Hill, M.P.

Smith, R., Coetzee, J.A. and Hill, M.P. *Egeria densa* (Hydrocharitaceae): The first submerged aquatic weed targeted for biological control in South Africa. *XVI International Symposium on Biological Control of Weeds*. Puerto Iguazú, Misiones, Argentina, Puerto Iguazú. Argentina. May 2023.

Sutton, G.F., Van Steenderen, C.J.M., Canavan, K., Yell, L.D., Chari, L.D. and Paterson, I.D.

Sutton, G.F., Van Steenderen, C.J.M., Canavan, K., Yell, L.D., Day, M., Taylor, T.K., McConnachie, A., Chari, L.D. and Paterson, I.D. Biological control of invasive African grasses: progress and prospects. *XVI International Symposium on Biological Control of Weeds*. Puerto Iguazú, Misiones, Argentina, Puerto Iguazú. Argentina. May 2023.

Sutton, G.F., Van Steenderen, C.J.M., Martin, G.D., Coetzee, J.A. and Owen, C.A.

Sutton, G.F., Van Steenderen, C.J.M., Martin, G.D., Coetzee, J.A. and Owen, C.A. 'ThermalSampleR': An R package and Shiny GUI to perform sample size calculations for thermal physiology studies. *23rd Congress of the Entomological Society of Southern Africa*. Stellenbosch University, Stellenbosch. South Africa. July 2023.

Tole, S., Jukes, M.D., Hill, M.P. and Moore, S.D.

Tole, S., Jukes, M.D., Hill, M.P., Moore, S.D. and Knox, C. Evaluating baculovirus mixtures against false codling moth *Thaumotibia leucotreta* Meyrick. (Lepidoptera: Tortricidae). *23rd Congress of the Entomological Society of Southern Africa*. Stellenbosch University, Stellenbosch. South Africa. July 2023.

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Tole, S., Knox, C., Jukes, M.D., Moore, S.D. and Hill, M.P. Evaluating baculovirus mixtures against false codling moth *Thaumotibia leucotreta* Meyrick. (Lepidoptera: Tortricidae). *Rhodes University's Annual Postgraduate Conference*. Rhodes University, Makhanda. South Africa. September 2023.

Townsend, G.R. and Hill, M.P.

Townsend, G.R., Hurley, B., Hill, M.P. and Roets, F. Assessment of the spread, host range and drivers of the polyphagous shot hole borer (PSHB) in indigenous South African forests. *23rd Congress of the Entomological Society of Southern Africa*. Stellenbosch University, Stellenbosch. South Africa. July 2023.



Honours class celebration - everyone wants to cut the cake!

Photo: M Villet.

Van Son, E.J.H., Kirkman, W. and Coetzee, J.A.

Van Son, E.J.H., Manrakhan, A., Kirkman, W. and Coetzee, J.A. A survey of fruit fly hosts in the Eastern Cape thicket. *23rd Congress of the Entomological Society of Southern Africa*. Stellenbosch University, Stellenbosch. South Africa. July 2023.

Van Steenderen, C.J.M., Kirkman, W., Faulkner, K.T. and Sutton, G.F.

Van Steenderen, C.J.M., Mauda, E., Kirkman, W., Faulkner, K.T. and Sutton, G.F. Predicting the possible establishment and spread of the Asian citrus psyllid *Diaphorina citri* Kuwayama in Southern Africa using species distribution modelling. *23rd Congress of the Entomological Society of Southern Africa*. Stellenbosch University, Stellenbosch. South Africa. July 2023.

Van Steenderen, C.J.M., Sutton, G.F., Yell, L.D., Canavan, K., Chari, L.D. and Paterson, I.D.

Van Steenderen, C.J.M., Sutton, G.F., Yell, L.D., Canavan, K., Chari, L.D., McConnachie, A. and Paterson, I.D. The Tetramesa (Hymenoptera: Eurytomidae) as biological control agents of invasive African grasses: A molecular investigation. *XVI International Symposium on Biological Control of Weeds*. Puerto Iguazú, Misiones, Argentina, Puerto Iguazú. Argentina. May 2023.

Villet, M.H. and Edwards, S.

Villet, M.H. and Edwards, S. The cicada genus *Tugelana* Distant, 1912 (Hemiptera, Cicadidae): phylogenetic position and conservation status. *16th Conference of the Southern African Society for Systematic Biology*. Stellenbosch University, Stellenbosch. South Africa. July 2023.

Villet, M.H., Van Steenderen, C.J.M. and Delpont, J.

Villet, M.H., Van Steenderen, C.J.M., Delpont, J. and Stals, R. Citizen Scientists apprehend alien stick insect in South Africa! *16th Conference of the Southern African Society for Systematic Biology*. Stellenbosch University, Stellenbosch. South Africa. July 2023.

Weaver, K.N., Smith, R., Hill, M.P., Petruzzella, A., Ngxande-Koza, S.W. and Coetzee, J.A.

Weaver, K.N., Smith, R., Hill, M.P., Petruzzella, A., Ngxande-Koza, S.W. and Coetzee, J.A. Community mass-rearing of waterweed biocontrol agents reaps rewards. *XVI International Symposium on Biological Control of Weeds*. Puerto Iguazú, Misiones, Argentina, Puerto Iguazú. Argentina. May 2023.

Yell, L.D., Sutton, G.F., Van Steenderen, C.J.M., Canavan, K., Muskett, P.C. and Paterson, I.D.

Yell, L.D., Sutton, G.F., Van Steenderen, C.J.M., Canavan, K., McConnachie, A., Muskett, P.C. and Paterson, I.D. Native-range studies on insect herbivores associated with African Lovegrass (*Eragrostis curvula*) in South Africa: prospects for biological control in Australia. *23rd Congress of the Entomological Society of Southern Africa*. Stellenbosch University, Stellenbosch. South Africa. July 2023.

A photograph of a stone archway with a crest above it, leading to a courtyard with people walking.

AFFILIATES AND INSTITUTES

Photo: Chris Marais

RHODES UNIVERSITY

African Studies Centre (ASC)



Professor Enocent Msindo

Director

Introduction

Founded in 2019 with the generous support of the German Research Foundation, the African Studies Centre has continued to focus its scholarly work under the theme, 'Reconfiguring African Studies'. The Centre is a space for joint knowledge production by our members and our extensive scholarly network.

Since its inception, the African Studies Centre has positioned Rhodes University as a key intellectual site for scholarly debates on African Studies and has facilitated widespread international collaborations by ensuring support for established scholars such as Visiting Fellows and emerging researchers such as Postdoctoral Fellows and PhD candidates. Most of our scholars who have been funded by the Centre to undertake their research work are largely based in existing academic departments and they currently report their research publications in the departments to avoid double reporting. Members of the Centre currently cut across four (4) of our six (6) faculties, being in the Humanities, Law, Science and Education faculties.

Between 2019 and 2023, the Centre funded the following large scale, multi-year projects, and this is in addition to many shorter duration projects:

Communities on the Margins of the State (Msindo, Madimu, Adetiba, and other partners);

Approaches to African Sonic Pedagogies (McConnachie and partners);

Sounding Africa (Watkins *et al.*);

Covid-19 in Africa (Msindo and other partners);

People-River relationalities (Odume and partners);

Arts and the Geopolitics of Africa (Simbao and other partners);

Women and the Liberation War (Magadla *et al.*);

Lived Experiences of Borderland Communities (Helliher *et al.*).



Back Row, left to right: Professor Patrice Mwepu, Professor Enocent Msindo, Professor Sussane Vetter, Thabisa Seyisi, Vuyelwa O'Lacy Moyo, Dr Esteri Msindo, Professor Laurence Juma and Professor Douglas Mpondi.

Front Row, left to right: Uzzaih Mutumbi, Dr Joseph Kwanya, Associate Professor Sally Matthews, Associate Professor Lynda Spencer, Dr Zinzi Sixaba, Dr Thando Njovane, Dr Olorunnibe Folaranmi Flourish, Walter Kudzai Barure, Professor Kirk Helliker and Dr Tapiwa Madimu.

Photo: Dirk Pieters.

The Centre has funded twenty-one (21) PhD candidates to enable them to complete their PhDs. Their successes have been and are reported in departmental reports. In 2023, we funded seven (7) PhD students and four (4) of those are expected to complete degrees in the course of 2024.

Postgraduates / Graduations

Details of candidates who successfully completed their PhD are within their departmental reports.

Distinguished Visitors / International Visits

The Centre has a well-established Visiting Fellowship programme. The purpose of the programme is to attract established scholars to the Centre to work for an agreed period, usually three (3) weeks to six (6) months. During their stay at the Centre, they participate in all academic activities, including contributing towards student's supervision, Postdoctoral Fellows mentorship and giving a seminar and a public lecture. Visiting Fellows also work on publications. In 2023, the Centre hosted the following Visiting Fellows:

Emeritus Professor Tunde Bewaji, Professor of Africa Philosophy and Religion, University of the West Indies.

Dr Bongani Gumbo, Environmental Historian, University of Botswana.

Professor Hassan Ndzovu, expert on Islam in Africa, Moi University, Kenya.

The African Studies Centre has positioned Rhodes University as a key intellectual site for scholarly debates on African Studies and has facilitated widespread international collaborations by ensuring support for established scholars such as Visiting Fellows and emerging researchers such as Post-doctoral Fellows and PhD candidates.

Significant Research Aligned Events

Dr Lee Watkins and his research partner based at the University of Bayreuth, **Dr Markus Coester** planned and undertook music outreaches in the Makhanda community and in Ghana.

Dr Boudina McConnachie produced African Music Podcasts.

Professor Ruth Simbao had a number of Art Gallery Exhibitions with her students under the theme 'Art and the Geopolitics of Africa'.

The Centre was well represented at the Conference at the University of Bayreuth in 2023, with **Professor Partice Mwepu** being selected to be a part of the editorial members to edit the volume that will be published out of the Conference.

African Studies Centre

Publications:

We will not report the publications of all our members here but expect them under their respective departments and Centres. The following colleagues have published out of researches that were either fully or partially funded by the Centre: Nelson Odume; Thando Njovane; Boudina McConnachie; Tapiwa Madimu; Siphokazi Magadla; Ruth Simbao; Patrice Mwepu; Lee Watkins and Dominique Santos. Below are some of the publications from members of the Centre who are not currently aligned to other departments

Books/Chapters/Monographs

Msindo, E.

Arndt, S., Banhorro, Y., Taibat, L., **Msindo, E.** and Peter, S. (2023) Covid-19 in Africa: Social and Economic Ramifications. *African Histories and Modernities*. F1963 (2023). p.1-13.

Arndt, S., Banhorro, Y., Lawanson, T., **Msindo, E.** and Simatei, P.T. (2023) Governance, Containment and the Covid-19 Pandemic. *African Histories and Modernities*. 2023 (2023). p.1-11.

Tondi, T.P.E.

Tondi, T.P.E. (2023) *Essays in Honour of Reverend Gladwin "Rassie" Pheya - Conversation with Thangana*. South Africa: Cluster Publication. ISBN: 9781920620530.

Helliker, K.

Matanzima, J., **Helliker, K.**, Popiwa, N. (2023). Borders, Borderlands and Borderlanders. In: Popiwa, N., Matanzima, J., Helliker, K. (eds) *Lived Experiences of Borderland Communities in Zimbabwe*. Springer Geography. Springer, Cham. https://doi.org/10.1007/978-3-031-32195-5_1 ISBN 978-3-031-32195-5.

Matanzima, J., and Helliker, K.

Matanzima, J. and Helliker, K. (eds) (2023) *Tonga Livelihoods in Rural Zimbabwe*. Routledge, 2023.

Peer Reviewed Subsidy-Earning Journal Research Publications

Akamagwuna, F.

Akamagwuna F.C., Odume, O.N. and Richoux, N.B. (2023). Agricultural Disturbance Affects Taxonomic and Functional Diversity of Afrotropical Macroinvertebrate Composition in a South African River System. *Environmental and Sustainability Indicators*. 18, p.100251.

Tumwesigye, E., Nnadozie, C.F., **Akamagwuna, F.C.**, Noundou, X.S., Nyakairu, G.W. and Odume, O.N. 2023. Microplastics as vectors of chemical contaminants and biological agents in freshwater ecosystems: Current knowledge status and future perspectives. *Environmental Pollution*. p.121829.

Msindo, E.

Msindo, E. 'A Experiencia Dos Estudos (De Area) Africanos: Uma Historia Intellectual'. *Afro-Asia*. no. 68, (2023), pp. 214-251.

Okorie, N.

Okorie, N. and Okeja, U. (2023) Child Trafficking in Africa: Reimagining the Problem. *Genealogy*. 7 (3). p.1-11.

Photo: Chris Marais



RHODES UNIVERSITY Albany Museum



Dr Phumlani Cimi
Manager

Introduction

Albany Museum is an affiliated research institute of Rhodes University. The Museum consists of a family of seven (7) buildings, which includes the Natural Sciences Museum, the History Museum, the Observatory Museum, Fort Selwyn, the Old Provost military prison, Drostdy Arch and the Old Priest's House.

On 1 July 2023, it welcomed its new director, **Dr Phumlani Cimi**, taking over from the recently retired former director, Mr Manzi Vabaza. Dr Cimi is not new to this position, as he had acted in it before. A botanist by training, he brings a wealth of management experience. In the same month, the Albany Museum also lost one of its young, bright scientists, **Dr Pindi Ntloko**, who was just eight months into her new position, having been a NRF-Professional Development Postdoctoral Fellow in the museum seven months prior. Dr Ntloko was a dearly loved colleague and will be greatly missed.

Albany Museum has **four research-intensive departments**, namely;

Department of Freshwater Invertebrates,

Department of Entomology and Arachnology,

Department of Earth Science and

Department of Botany.

The latter houses the Selmar Schonland Herbarium, which is closely affiliated with the Department of Botany at Rhodes University, as such, its report is not repeated here.

The Earth Science Department's Devonian Ecosystem's Project continued to untap the palaeontological potential of the Devonian (360- 420 million-year-old) rocks of the Cape Supergroup. Much of the exploration and published research continues to be on the Witteberg Group's Late Devonian deposits, from strata recently exposed by road cuttings on the N2 highway in the

vicinity of the City of Makhanda. Exciting new sites are also being excavated in early and mid Devonian strata of the Bokkeveld and uppermost Table Mountain groups. Public outreach has included local and international coverage of the release of the paper on the southern hemisphere's earliest known brittle stars. The gallery of Waterloo Farm fossils, paintings and information boards continues to bring awareness of our Devonian fossil heritage to both adults and learners.

The Department of Entomology and Arachnology houses approximately 270 000 insect, spider, and scorpion specimens. It is the largest collection of its kind in the Eastern Cape and serves to represent the diversity of these groups from South Africa. Research focuses primarily on the systematics and taxonomy of pollinating true flies (Diptera: Syrphidae) and allied groups known to frequently visit flowers. Research highlights during 2023 emanated primarily from collaborative fieldwork to the Drakensberg, and the indigenous forest patches along the escarpment near Stutterheim, the Katberg and northern KwaZulu-Natal. Collecting and documenting pollinating *Diptera* from these poorly studied areas was carried out with colleagues from the KwaZulu-Natal Museum, the National Museum in Bloemfontein and the Royal Museum for Central Africa (AfricaMuseum), Tervuren, Belgium.

Postgraduates / Graduations

The Department of Freshwater Invertebrates (FWI) had two students (**Nonkazimulo Mdidimba** and **Zizile Mlungu**) graduating and obtaining their MSc degrees in 2023. Ms Mdidimba worked on the invasive crayfish problem, while Ms Mlungu focussed on the taxonomic revision of the enigmatic subterranean amphipod genus (*Sternophyinx*).

Distinguished Visitors / International Visits

The Department of Freshwater Invertebrates curator, **Mr Mlambo**, participated and taught in a field school in Rwanda entitled "Mind the Darwinian Shortfalls - A graduate summer school on biodiversity and collection management in East Africa" at Nyungwe National Park, organised and facilitated by the Center of Excellence in Biodiversity & Natural Resource Management (CoEB), University of Rwanda.

Retired Professor Connal Eardley, Aculeate Hymenoptera specialist, and taxonomist, continued to visit the Department of Entomology and Arachnology, furthering his work in making keys to identify bees from the southern African region. **Professor Craig Peter** from the Rhodes University Botany Department visited the collection and also continues to visit the Department of Entomology and Arachnology, towards his work on pollination and the interactions between insects and plants.

The Devonian Ecosystems Project hosted four high profile visits by leading researchers from Australia (Professor Kate Trinajstić of Curtin University, Dr Brian Choo of Flinders University, and Carole Burrow of Queensland Museum) and from Wales (Dr Chris Berry of Cardiff University) to work on various aspects of palaeobotany and palaeontology with **Dr Rob Gess** and his students.

Dr Robert Gess also accepted the invitation as a member of the European Research Council funded, Uppsala University hosted, 'Tracking our ancestors across the Devonian world project', to visit the University of Riga (Latvia) and study collections related to his research as well as to participate in July 2023 in an excavation of the Pavari 2 (Ketleri Formation) tetrapod bearing site in Latvia.

Significant Research Aligned Events

Our MSc student (**Ms Sibusisiwe Moyo**), hosted by FWI, won the best presentation award at the South African Environmental Observation Network (SAEON) Graduate Student Network (GSN) Indibano conference in Cape Town.

Our scientists described six (6) fossil species (damselfly-like' insect, prosbold insect, "cicada-like" insect, bony fish and brittle stars), three (3) freshwater species (freshwater crab and aquatic beetles), and one (1) terrestrial insect (hover fly) new to science. These included erecting three (3) new genera. Also, they discovered a presence of an invasive aquatic flatworm in South African waters.

Peer Reviewed Subsidy-Earning Journal
Research Publications**Bellingan, T.A.**

Midgley, J.M., Bellingan, T.A., and Jordaens, K. 2023. Description of the female of the hover fly species *Spheginobaccha pamela* Thompson and Hauser (Diptera: Syrphidae: Microdontinae). *Studia dipterologica - Supplement*. 23 (2023). p. 255-264.

Midgley, J. M., Muller, B. S., Theron, G. L. Phoofofo, M. **Bellingan, T. A.** and Jordaens, K. 2023. The Diptera of Lesotho: a history of collecting in the Mountain Kingdom, summary of recent collecting sites and introduction to the topical collection in African Invertebrates. *African Invertebrates*. 64 (2023). p. 207-220.

Midgley, J.M., **Bellingan, T.A.**, and Jordaens, K. 2023. A revision of the hover fly genus *Amphoterus* Bezzi, 1915 (Diptera, Syrphidae) with the description of one new species. *African Invertebrates*. 64 (2023). p. 149-163.

Midgley, J. M., and Bellingan, T. A. (2023). Notes on the *Bittacus* (Mecoptera, Bittacidae) of Mozambique, with the description of a new species. *African Invertebrates*. 64 (2023). p. 95-107.

de Moor, F.C. and James, H.

Namiotko, T., **de Moor, F.C.**, **James, H.**, Schön, I. and Martens, K. (2023) Environmental correlates of non-marine ostracod (Crustacea: Ostracoda) assemblages of the Eastern Cape (South Africa). *Hydrobiologia*. 850 (2023). p. 4859-4878.

Gess, R.W.

Gess, R.W. and Ahlberg, P.E. (2023) A high latitude Gondwanan species of the late Devonian tritichopterid *Hyneria* (Osteichthyes: Sarcopterygii). *PLoS ONE*. 18 (2). p.1-21.

Reddy, C.P., Thuy, B., Reid, M. and **Gess, R.W.** (2023) Earliest known ophiuroids from high palaeolatitude, southern Gondwana, recovered from the Pragian to earliest Emsian Baviaanskloof Formation (Table Mountain Group, Cape Supergroup) South Africa. *PLoS ONE*. 18 (10). p.1-17.

James, H.

Odume, N.O., **Akamagwuna, F.C.**, **Ntloko, P.**, Dallas, H.F., **Nnadozie, C.F.** and **James, H.** (2023) A trait database for southern African freshwater invertebrates. *African Journal of Aquatic Science*. 48 (1). p.64-70.

Maliwa, L.

Peer, N., **Gouws, G.**, **Maliwa, L.**, Barker, N., Juby, P. and Perissinotto, R. (2023) Description of a new montane freshwater crab (Arthropoda, Malacostraca, Decapoda, Potamonautidae) from the Eastern Cape, South Africa. *ZooKeys*. 1160 (2023). p.89-109.

Mlambo, M.C.

Bird, M.S., Bilton, D.T., **Mlambo, M.C.** and Perissinotto, R. (2023) Water beetles (Coleoptera) associated with Afrotemperate Forest patches in the Garden Route National Park, South Africa. *ZooKeys*. 1182 (2023). p.237-258.

Nava, V., Chandra, S., Aherne, J., Alfonso, M.B., Antão-Geralde, A.M., Attermeyer, K., Bao, R., **Mlambo, M.C.**, **Motitsoe, S.N.** and *et al.* (2023) Plastic debris in lakes and reservoirs. *Nature*. 619 (2023). p.317-322.

Bilton, D.T. and **Mlambo, M.C.** (2023) A revision of *Delevea* Reichardt, 1976: a Southern African endemic water beetle genus including the largest known extant myxophagans (Coleoptera: Myxophaga: Torridincolidae). *Zootaxa*. 5285 (2). p.311-324.

Aldridge, D.C., Ollard, I.S., Bespalaya, Y.V., Bolotov, I.N., Douda, K., Geist, J., **Mlambo, M.C.** and *et al.* (2023) Freshwater mussel conservation: A global horizon scan of emerging threats and opportunities. *Global Change Biology*. 29 (2023). p. 575-589.

Lawrie, A.D., Chaplin, J., Kirkendale, L., Whisson, C., Pinder, A. and **Mlambo, M.C.** (2023) Phylogenetic assessment of the halophilic Australian gastropod *Coxiella* and South African *Tomichia* resolves taxonomic uncertainties, uncovers new species and supports a Gondwanan link. *Molecular Phylogenetics and Evolution*. 184 (2023). p. 1-14.

Mutshekwa, T.

Munyai, L.F., Liphadzi, T., **Mutshekwa, T.**, Mutoti, M.I., **Mofu, L.** and Murungweni, F.M. (2023) Water and Sediment Chemistry as Drivers of Macroinvertebrates and Fish Assemblages in Littoral Zones of Subtropical Reservoirs. *Water*. 16 (2023). p. 1-25.

Ntloko, P., Kirkaldy, B.P. and Mlambo, M.

Trembath, J., **Ntloko, P.**, **Kirkaldy, B.P.** and **Mlambo, M.** (2023) First record of freshwater planarian *Girardia sinensis* Chen & Wang, 2015 (Platyhelminthes, Tricladida, Continenticola) in South Africa. *BiolInvasions Record*. 12 (2023). p. 1059-1068.

Prevec, R.

Nel, A., **Zozo, E.**, Garrouste, R. and **Prevec, R.** (2023) Pereboriidae: a Permian clade of hemipteran insects with disjunctive distribution in the Northern and Southern parts of Pangea. *Acta Palaeontologica Polonica*. 68 (2023). p. 85-93.

Nel, A., **Prevec, R.** 2023. The oldest putative Prosbold insect from Africa. *Acta Palaeontologica Polonica*. 68 (2023). p. 95-102.

Nel, A., Garrouste, R. and **Prevec, R.** 2023. The first Permian Gondwanan damselfly-like *Protozygoptera* (Insecta, Odonatoptera). *Historical Biology*. 356 (2023). p. 870-874.

Research Papers Presented at Academic/Scientific
Conferences (Non-peer-reviewed Proceedings)**Bellingan, T.A.**

Bellingan, T.A., Midgley, J.M., Georgen, G.G. and Jordaens, K. 2023. Biological observations of the larvae of *Meromacroides meromacriiformis* (Bezzi, 1915). Poster Presentation. At: *23rd Congress of the Entomological Society of Southern Africa (ESSA)*. 11 - 14 July 2023, Stellenbosch, South Africa.

Bellingan, T.A., Midgley, J.M., and Jordaens, K. 2023. The genus *Amphoterus*: taxonomic notes on a rare Afrotropical hover fly genus. Poster Presentation. At: *23rd Congress of the Entomological Society of Southern Africa (ESSA)*. 11 - 14 July 2023, Stellenbosch, South Africa.

Bellingan, T.A., Midgley, J.M., and Jordaens, K. 2023. Taxonomic notes on *Spheginobaccha pamela* Thompson and Hauser, 2015. Poster Presentation. At: *23rd Congress of the Entomological Society of Southern Africa (ESSA)*. 11 - 14 July 2023, Stellenbosch, South Africa.

Campbell, K.M., Motitsoe, S. and Mlambo, M.C.

Campbell, K.M., **Motitsoe, S.**, **Mlambo, M.C.**, Kubheka, S. and Janse van Rensburg, S. (2023). Comparative Population Dynamics of Freshwater Shrimps (*Caridina africana*) of Lake Sibaya: 40 years on. *5th National Global Change Conference*. Bloemfontein Campus, University of the Free State, South Africa. 30 January - 2 February 2023.

Cimi, P.V.

Cimi, P.V. 2023. Mobilization of wild vegetables (imifino) and other indigenous plants to support primary school Natural Sciences teachers to mediate learning of the topic nutrition. *Balancing Ecology and Economy*. Amazwi Literature, Heritage, Ecology Conference 15 - 16 March 2023. Page 4 in the programme. South African Museum of Literature, Makhanda, South Africa.

Ngcoza K.M., Nhase Z., Mutanho C., Shinana E., **Cimi P.V.**, Nuntsu S. and Nyamakuti M. 2023. The power of indigenous African women in fostering cultural brokerage practices to decolonise the science curriculum in Sub-Saharan Africa. *31st Southern African Association for Research in Mathematics, Science and Technology Education (SAARMSTE) Conference*. 17-19 January 2023. Sc2023_072_SYM in the programme. University of Free State, Bloemfontein, South Africa.

de Moor, F.C.

Kuzwayo, L., Toucher, M., **de Moor F.C.** and van Rensburg, S. (2023). Tracking change over time in species diversity along the Thukela River and some of its tributaries starting in the 1950's to present day: Trichoptera. *5th National Global Change Conference*. Bloemfontein Campus, University of the Free State, South Africa. 30 January - 2 February 2023.

Gess, R.W.

Nel, R., Trinajstić, K.M. and **Gess, R.W.** Placoderm diversity in the high palaeolatitude Waterloo Farm Lagerstätte. *Palaeo Down Under 3*. WA Museum, Perth. Australia. July 2023.

Choo, B. and **Gess, R.W.** Dawn of African ray-fins. A new actinopterygian fish from the Upper Devonian Waterloo Farm Lagerstätte, South Africa. *18th Conference on Australasian Vertebrate Evolution, Palaeontology and Systematics (CAVEPS)*. Melbourne Museum, Melbourne. Australia. November 2023.

Harris, C., Gess, R.W., Penn-Clarke, C.R. and Jinnah, Z. Zoophycos in the Witpoort Formation (Witteberg Group, Cape Supergroup, South Africa). *Geocongress*. University of Stellenbosch, Stellenbosch. South Africa. January 2023.

During, M., Clayes, P., Goderis, P., Gess, R.W. and Ahlberg, P.E. Unique Preservation and REE enrichment of Famennian fossils from the Waterloo Farm Deposit, South Africa. *83rd Annual Meeting of the Society of Vertebrate Paleontology*. Duke Energy Convention Center, Cincinnati, USA. October 2023.

Kolisi, S., Motitsoe, S., and Mlambo, M.C.

Kolisi, S., Motitsoe, S., Mlambo, M.C., and Zengeya T (2023). Using ensemble models to predict the change in habitat range of *Melanoides tuberculatus* due to invasion by *Tarebia granifera* in South Africa. *South African Environmental Observation Network (SAEON) Graduate Student Network (GSN) Indibano conference*. Cape Town. 22 - 27 October 2023.

Kolisi, S., Motitsoe, S., Mlambo, M.C., and Zengeya, T. (2023). Predicting the spread of a notorious *Thiaridae* invader in South Africa using ensemble models. *National symposium on biological invasions 2023*. Houw Hoek Hotel, Stellenbosch, South Africa. 4 - 6 July 2023.

Kolisi, S., Motitsoe, S., Mlambo, M.C. and Zengeya, T. (2023). Predicting the global spread of two aggressive *Thiaridae* invaders using ensemble models. *III International Young Researchers Conference on Invasive Species*. Vigo, Spain (online). 22 - 23 May 2023.

Majingo, Z.

Majingo, Z., Nokwali, Z., and Duna, O.O. (2023). Comparison of species diversity and composition in marine protected areas and non-protected of the Eastern Cape, South Africa. *5th National Global Change Conference*. Bloemfontein Campus, University of the Free State, South Africa. 30 January - 2 February 2023.

Manqa, L.

Manqa, L. and Woodford, D. (2023). The impact of different land-uses on macroinvertebrates and water quality of the Sterkstroom River in the North West Province. *Southern African Society for Aquatic Scientists (SASAQs) Annual Conference*. Western Cape, South Africa. 25 - 29 June 2023.

Mlambo, M.C.

Mlambo, M.C. (2023). Taxonomic and phylogenetic assessment of *Tomichia Benson*, 1851 (Gastropoda, Tomichidae) in South Africa. *Southern African Society for Aquatic Scientists (SASAQs) Annual Conference*. Western Cape, South Africa. 25 - 29 June 2023.

Moyo, S., Motitsoe, S.N. and Mlambo, M.C.

Moyo, S., Motitsoe, S.N., Mlambo, M.C. and Kubheka, P.S. (2023). Environmental drivers of macroinvertebrate diversity in high altitude temporary wetlands, Maluti-Drakensberg Mountain. *South African Environmental Observation Network (SAEON) Graduate Student Network (GSN) Indibano conference*. Cape Town. 22 - 27 October 2023.

Moyo, S., Motitsoe, S.N., Mlambo, M.C. and Kubheka, P.S. (2023). High altitude temporary systems and invertebrate composition in La Nina cycle, Maloti-Drakensburg. *5th National Global Change Conference*. Bloemfontein Campus, University of the Free State, South Africa. 30 January - 2 February 2023.

Mutshekwa, T.

Mutshekwa, T., Munyai, L., Mugwedi, L., Cuthbert, R.N., Dondofema, F. and Dalu, T. (2023). Seasonal occurrence of microplastics in sediments of two South African recreational reservoirs. *Southern African Society for Aquatic Scientists (SASAQs) Annual Conference*. Western Cape, South Africa. 25 - 29 June 2023.

Ntloko, P., Palmer, C.G., Mlambo, M.C. and Odume, O.N.

Ntloko, P., Palmer, C.G., Mlambo, M.C. and Odume, O.N. (2023). Developing a trait-based approach for assessing and predicting the potential vulnerability and resilience of South African macroinvertebrates to fine-sediment impact in the Tsitsa river and tributaries. *5th National Global Change Conference*. Bloemfontein Campus, University of the Free State, South Africa. 30 January - 2 February 2023.

Soko, O., Potts, W. and Childs, A-R.

Soko, O., Potts, W., Childs, A-R. and Muller, C. (2023). Identification of thermal tolerance and thermal stress of an estuarine-dependent species, *Rhabdosargus holubi*. *Southern African Society for Aquatic Scientists (SASAQs) Annual Conference*. Western Cape, South Africa. 25 - 29 June 2023.

RHODES UNIVERSITY

Institute for Environmental Biotechnology Rhodes University (EBRU)



Professor Keith Cowan

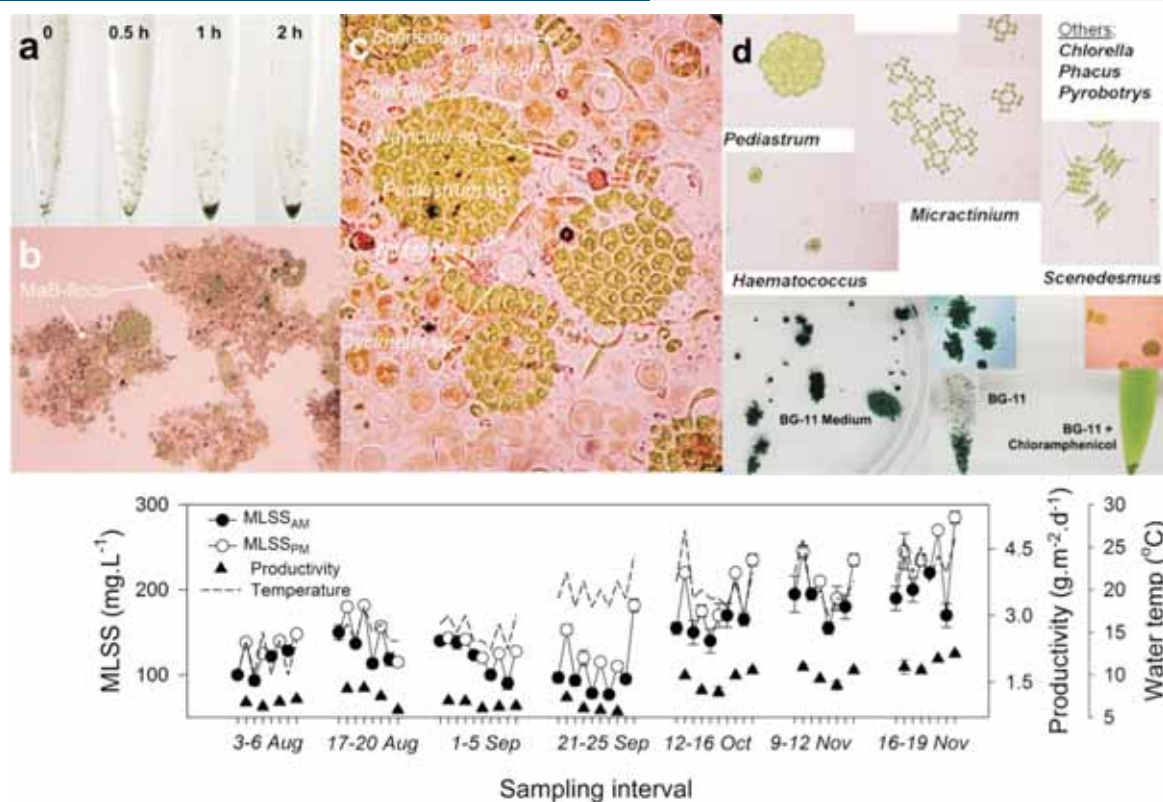
Director

Introduction

The Institute for Environmental Biotechnology, Rhodes University (EBRU) promulgated in 2008, targeted research and development in environmental biotechnology at the interface between the fundamental and applied sciences. Environmental biotechnology is the branch of biotechnology that addresses environmental concerns, such as pollution, renewable bio-energy generation, biomass generation, and production of bio-based commodity and high-value products. Environmental biotechnology is a cornerstone of circular economic industrial processes and aims to minimise environmental impact, and lower waste to make the most of the resource. Thus, environmental biotechnology has a regenerative approach.

Focus areas have always included: wastewater and its beneficiation; renewable energy derivation and generation; land and soil rehabilitation and decontamination technology (e.g. post-mining, hydrocarbon spillages, etc.), natural products, and agricultural and microalgal biotechnology. Basic activities remain supported by a strong emphasis on technology transfer from laboratory to full-scale commercial/industrial process application and implementation.

In brief, the focus of attention has been to use microbes and/or natural products to perform industrially important tasks in an environmentally sustainable way. However, and very unfortunately, the collapse of sanitation infrastructure in Makhanda and the dereliction of the municipal Belmont Valley Wastewater Treatment Works prevented operation of our pilot plant activities and has, as a consequence, rendered a much smaller research group seeking new directions for study. The experimental station and the associated algae-based wastewater treatment process were severely vandalised and looted in late 2022 and early 2023 and have been rendered irreparable. These and other mostly safety-related aspects has meant that basic research activities and student training needed to be relocated



'Pharming' MaB-flocs on wastewater for biopolymers, bio-flocculants and bio-fertilizer. Photo: EBRU.

to main campus. An outcome has been that EBRU, the institute and scholarly entity, will be incorporated into its current host department, the Department of Biotechnology and the Biotechnology Innovation Centre (BIC).

The above notwithstanding, four (4) Postgraduate students continue to research various aspects of environmental monitoring and bio-remediation. One (1) PhD is exploring the use of bacteria with plant growth-promoting properties in an effort to develop a novel bio-fertiliser. We plan to generate a formulation that will enhance plant growth and reduce reliance on fossil fuel-derived fertilisers upon application to the soil. A second project seeks to evaluate the use of bespoke microalgae to innovate an algae-based bioprocess for converting and recirculating side streams (i.e, settled sludge and wastewater) in dryland aquaculture. Additional PhD research projects seek to determine the origin and spread of antimicrobial resistance by examining the proliferation of antibiotic resistance genes in various environments.

EBRU continues to focus on commercialising technologies incubated at EBRU for the regenerative restoration of waste streams to provide much-needed long-term ecological service. Utilisation of waste streams and the beneficiation of these via circular economic bioprocesses has been realised for the following EBRU-incubated technological bioprocesses. First, 'Fungcoal', a phytoremediation strategy for use in the rehabilitation of soil and land including coal discard dumps and polluted, degraded and mining disturbed land. To mitigate coal pollution and acid mine leaching plant-fungal mutualism was exploited to promote in situ degradation of hydrocarbon

Environmental biotechnology is a cornerstone of circular economic industrial processes and aims to minimise environmental impact, and lower waste to make the most of the resource.

pollutants. The outcome is increased humic-like substance concentration and formation of a soil-like material (a technosol) in the rhizosphere and successful establishment of natural grassland vegetation. Second, 'MaB-floc Farming' on wastewater for biopolymers, bio-flocculants and bio-fertilizer. Here, microalgal-bacterial mutualism has been successfully exploited to derive extrapolymeric substances comprising polysaccharides, proteins, uronic acid, and nucleic acid. In turn, these are used as bioflocculant in water purification and in the dewatering and settling of algae as natural replacements for commercially available synthetic and/or fossil fuel-derived polymers. Third, an 'Algae-based Wastewater Treatment and Energy Recovery Systems' for municipal sewage treatment and beneficiation that produces an effluent that complies with the general limit values for irrigation/discharge to a water resource that is not listed for volumes up to 2,000 m³ per day. Mapped energy flows and green-house gas emissions yield - 0.16 tons CO₂ per 1,000 m³ of wastewater treated. Products of this process include water for reuse (~28,000 m³/y), biogas (~55 kWh.PE/y), and biomass (>3 tons dry mass/y).

In early 2023, a license agreement was entered into between the University and a third party for the commercialisation of the 'Fungcoal' technology.

Institute for Environmental Biotechnology Rhodes University (EBRU)

Peer Reviewed Subsidy-Earning Journal Research Publications

Laubscher, R.

Vhiriri, E.P., Laubscher, R., Irwin, Y. and Tandlich, R. (2023) Roles of public service and private stakeholders in the 2017 - 2018 listeriosis epidemic in South Africa: An ethical conjecture. *Journal of Emergency Management*. 21 (8). p.1-11.

Masudi, W.L., Titilawo, O.Y., Keshinro, M.O. and Cowan, A.K. (2023) Isolation of bacteria with plant growth-promoting properties from microalgae-bacterial flocs produced in high-rate oxidation ponds. *Environmental Technology (United Kingdom)*. 2023 (2023). p.1-15.

Sekhohola-Dlamini, L.M. and Cowan, A.K.

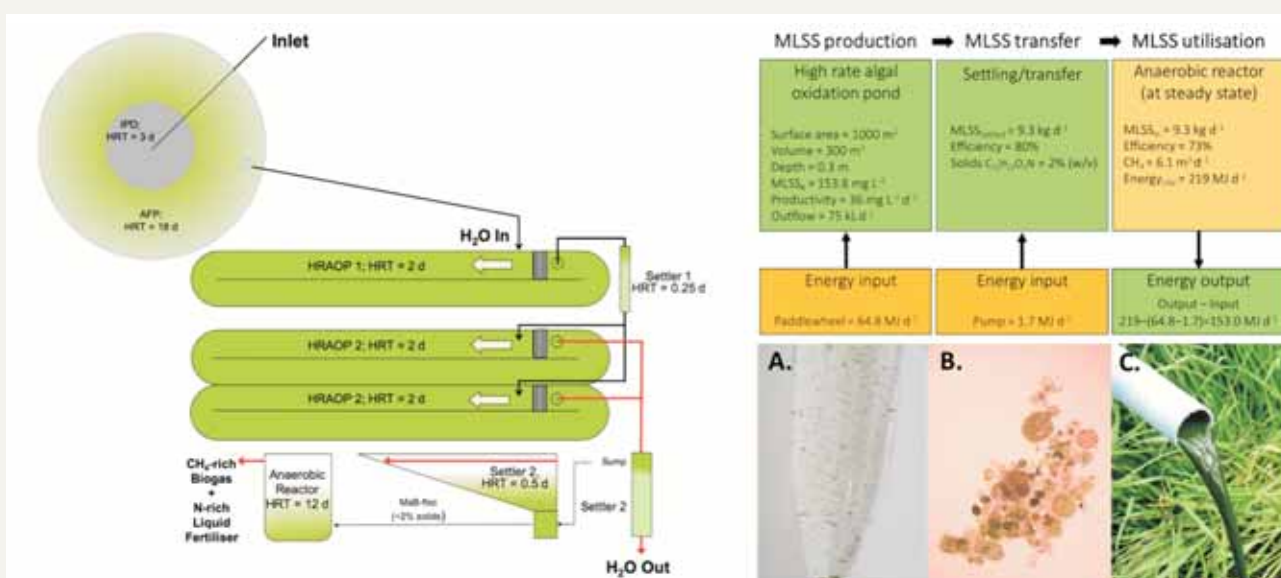
Dlamini, P., Sekhohola-Dlamini, L.M. and Cowan, A.K. (2023) Editorial: Soil-microbial interactions. *Frontiers in Microbiology*. 14 (1213834). p.1-3.

Tebitendwa, S.M. and Cowan, A.K.

Tebitendwa, S.M. and Cowan, A.K. (2023) Discard Coal as Filter Bed Material in Horizontal Subsurface Flow Constructed Wetlands: a Preliminary Study. *Water, Air, and Soil Pollution*. 234 (4). p.1-11.



Phytoremediation of coal discard dumps, polluted, degraded and disturbed land. Photo: EBRU.



Algae-based wastewater treatment and the Integrated Algal Pond Systems.

Photo: EBRU.

RHODES UNIVERSITY

Institute for the Study of the Englishes of Africa (ISEA)



Professor Deyi Mbelani

Director

Introduction

The Institute for the Study of the Englishes of Africa (ISEA) contributes to research related to the teaching of English in diverse communities where African languages are used. To this end, the Bachelor of Education in English Language Teaching is offered to in-service teachers in the Eastern and Northern Cape. In addition, staff supervise Postgraduate scholars whose projects focus on critical issues of languages, literature, and literacies in basic education, higher education, and in the home. Moreover, the ISEA is a publishing house for three (3) journals: *English in Africa*, *Shakespeare in Southern Africa*, and *New Coin*.

Postgraduates / Graduations

Four (4) PhD and seven (7) MEd scholars were supervised at various stages at the ISEA. Once every Tuesday of the month, online seminars were held. There were also five-day contact seminars offered at Rhodes University which provided structured support and offered scholarly engagement with topical issues in languages, literature, and literacies.

Thanks to the supervision provided by ISEA staff, two (2) PhD candidates, five (5) MEds, and one (1) MA in Creative Writing students graduated at Rhodes University in April and October 2023. One (1) PhD candidate and two (2) MEd students who were supervised by an ISEA staff member graduated at the University of the Western Cape in April and December 2023.

Distinguished Visitors / International Visits

Professor Jenifer Rowsell of the University of Sheffield in the United Kingdom, and the lead editor of the *Reading Research Quarterly Journal*, had a virtual discussion with the ISEA staff, and MEd students and PhD candidates on publishing during Postgraduate studies in June 2023.

Institute for the Study of the Englishes of Africa (ISEA)



LiTASA 2023. *Left to right:* Dr Anele Gobodowana (Department of Primary and Early Childhood Education at RU), Mr Michael Lila, Dr Rethabile Mawela, Mr Sizwe Jabe, Ms Xolela Ntinkca, and Mr Xolela Mbebe.

(All members of the Tuesdayfortnight seminars on language, literature, and literacy teaching).

Photo: ISEA.



Staff, MEd students and PhD candidates during a five day long seminar at Rhodes University.

Photo: ISEA.

Books/Chapters/Monographs

Hendricks, M.

Hendricks, M. and Nkomo, D. (2023) The Institutionalization and Integration of English in a Multilingual South African Context. In: Akinlotan, Mayowa (ed.). *Englishes in Africa*. New York: Peter Lang. p.75-98. ISBN: 9781433192869.

Leff, C.

Leff, C. (2023). *The Afropolitan Flâneur in Literature (paperback edition)*. Cambridge Scholars Publishing, Newcastle upon Tyne.

Willan, B.

Comaroff, J. and Willan, B. (2023) *The Mafeking Diary of Sol T Plaatje (50th-anniversary edition)*. Midrand: Xarra books. ISBN: 9781776415465.

Willan, B. (2023) Past and Present in Sol Plaatje's Mafeking Diary: the making of a diarist. In: Willan, B. and Mokae, S.-M. (eds). *Sol Plaatje's Mafeking Diary: reconsideration and restoration*. Johannesburg: Jacana Media (Pty) Ltd. p.145-157. ISBN: 9781431434299.

Willan, B. and Mokae, S.P.

Willan, B. and Mokae, S.P. (eds) (2023) *Sol Plaatje's Mafeking Diary: reconsideration and restoration*. Johannesburg: Jacana Media (Pty) Ltd. ISBN: 9781431434299.

Creative Writing

Leff, C.

Leff, C. (2023) poem. In: Skinner, D.R. (ed.). *Red Earth*. Cape Town: African Sun Press.

Leff, C. (2023) poem. In: Skinner, D.R. (ed.). *Paralytic Grief*. Cape Town: African Sun Press.

Leff, C. (2023) poem. In: MacLennan, S. (ed.). *Dawning*. Port Alfred: Aerial Publishing.

Leff, C. (2023) poem. In: Skinner, D.R. (ed.). *Dawning*. Online: Avbob Poetry Project.

Leff, C. (2023) poem. In: *Not Sweet Enough*. Online: Avbob Poetry Project.

Peer Reviewed Subsidy-Earning Journal Research Publications

Willan, B. and Mokae, S.P.

Willan, B. and Mokae, S.P. (2023) Celebrating Fifty Years of Sol Plaatje's Mafeking Diary. *Bulletin of the National Library of South Africa*. 77 (2). p.7-22.

ISEA Publications

English in Africa. 50.1 (April 2023)

Eds David Attwell, Matthew Shum, Tony Voss. pp. 142.

English in Africa. 50.2 (September 2023)

Eds David Attwell, Matthew Shum, Tony Voss. pp. 124.

English in Africa. 50.3 (December 2023)

Eds David Attwell, Tony Voss, Gail Fincham with Guest Editor Sandile Ngidi. pp.110.

New Coin. 58.2 (December 2022) Ed. Kyle Allan. pp. 153.

New Coin. 59.1 (June 2023) Ed. Kyle Allan. pp. 126.

New Coin. 59.2 (December 2023) Ed. Kyle Allan. in process.

RHODES UNIVERSITY

Institute of Social and Economic Research (ISER)



Professor Cyril Mbatha

Director

Introduction

2023 saw the ISER take some big steps forward on several fronts and consolidated ground on previous activities and projects. Fieldwork visits were undertaken to the Western Cape province for the WRC project to develop a policy-oriented course on Ecological Infrastructure. Field surveys were also conducted in the Upper uMzimvubu Catchment around Matatiele in the Eastern Cape province for the WWF partially sponsored project on Green-Fed Beef production, with two final technical reports concluded for each project.

For new projects, perhaps the most exciting news included the launch of the NRF's Future Earth Africa Hub Leadership Centre (FEAHLIC), a collaboration between Rhodes University and University of Pretoria (UP). The centre is housed in the ISER and co-led by the ISER, the Environmental Learning Research Centre (ELRC), the Institute of Water Research (IWR) and Future Africa (FA) campus at UP. The centre is aligned with ISER's research policy training across the continent. A number of visits, locally and internationally, in preparation of the establishment of the centre, are captured by some of the images in this report. Also associated with the work of Future Earth Africa Hub, was the launch of the ISER led project for establishing the Land and Investments Science Cluster with partners in four African countries (Ghana, Kenya, Tanzania and South Africa).

On supporting research publications in general, the *Journal of Contemporary African Studies* (JCAS) historical backlog is down to 100s from the 300s within the last eighteen months but still requires strong management to avoid another wave of backlogs, which dated back to 2017. The ISER has put in place an HR based system to manage possible future build-ups as the host institution for the journal.

On Postgraduate research-focussed teaching to prepare future researchers and research-based policy analysts, the Humanities' Interdisciplinary Honours Degree in Development Studies (coordinated by the ISER), is in its third year and is known and



Professor Emeritus Valerie Møller participated in the 2023 International Society for Quality of Life Studies (ISQOLS) where she met up with colleagues from Belgium and the Philippines who are involved in collecting Bernheim's ACSA measure of human well-being. Bernheim's ACSA (Anamnestic Comparative Self-Assessment) asks people to evaluate their current situation relative to how they felt in the best and worst periods of their lives. The 2023 ISQOLS Rotterdam conference included for the first time the new of 'Endowed Track for the Advancement of Quality of Life and Well-Being in Sub-Saharan Africa'. Professor Møller was asked to chair the two sessions that featured presentations on studies of different aspects of quality of life conducted by scholars based at universities across South Africa and other organisations in the region.

Photo: ISER.

discussed nationwide on social media platforms including *Facebook*. Our Winter School on Data Analysis is also still running, supporting members of the public and Rhodes University staff and all Postgraduate students taking the ISER module from departments including Economics and Economic History and Political and International Studies. An MOU with Vanguard Economics, a private research partner based in Rwanda, Kigali was also drafted in December 2023 for signing in 2024.

On the public media front, the ISER was highly active in the national media space, starting with public debates on the one-year anniversary of the war in Ukraine in February 2023 (*News24* Friday's Editor Brief and the *SABC news*), the implications of RSA losing its AGOA benefits as a result of political links with Russia towards preparations for the BRICS summit (see *News24* editorial coverage and the *SABC news* reports). The latest discussions of AGOA were linked to the AGOA Forum hosted by RSA for the whole continent (see *Daily Maverick*, and the

Mail & Guardian's business news articles and the *eNCA* and *SABC* coverage of the ISER). The ISER is now deeply entrenched in the imagination of the South African public and US government trade policy making platforms when it comes to analytical discussions of global trade, economic and associated political events and issues.

Here are some of the highlights from 2023 in no particular order:

- a) The launch of the **Future Earth Africa Hub (FEAH)** and its Leadership Centre took place at Nelson Mandela University's Research and Innovation week in June 2023. **Professor Cyril Mbatha** made the main presentation in the first of two (2) sessions for the Future Earth Africa Hub.
- b) The **Interdisciplinary Honours Degree in Development Studies** for 2023 saw its highest number of applications and finally admitted students coming from outside Rhodes University, including from universities like Wits University, Mpumalanga University, University of the Western Cape, University of the Free State, and the University of Cape Town, at the start of the 2023 academic year.
- c) **Dr Steffen Otterbach** (Universität Hohenheim in Germany and ISER Visiting Research Fellow) eventually came to Rhodes University in September/October 2023 on the Hobart-Houghton Research Fellowship which was hosted jointly at the ISER and the Department of Economics and Economic History. He presented two stimulating seminars at the ISER and in the Economics Department. Thanks goes to Professor Jen Snowball for supporting this initiative.
- d) The 2023 appointed **ISER Visiting Research Fellow** from the University of Nairobi, **Professor Tabitha Kiriti-Nganga**, Chair of the WTO Chairs Program at the University of Nairobi, hosted a women's month public discussion on Gender and Trade in Africa.
- e) **Professor Emeritus Valerie Møller** alongside **Dr Ben Roberts** of the HSRC presented their research findings on *Youth and Hope* for Youth Day on 16th of June 2023 on *SABC*.
- f) **Professor Valerie Møller** is still deeply involved in academic research publication and networking which adds great academic value to the work of the ISER in the Human Development and Quality of Life Theme.
- g) **Dr Faten Attig-Bahar** from Future Earth Global joined the ISER in October 2023 to support the establishment of the FEAHLC on a consultant basis supported by Rhodes University's HR Division. In June and October 2023, Dr Attig-Bahar and **Professor Cyril Mbatha** attended two (2) events in Panama (SRI 2023) and in Rwanda (UN Climate Change Programme) to develop African based partnerships for the Future Earth Africa Hub and the Leadership Centre.
- h) The inaugural **Sustainability Science Cluster** meeting of the FEAHLC was held over two (2) days on 27 - 28 November 2023 at the Future Africa campus at the University of Pretoria, with invited delegates from Tanzania, Zimbabwe, Ghana, as well as all implementing and consortium partners.

Postgraduates / Graduations

Although the ISER is not a teaching department, we still registered, supervised and graduated the following Postgraduate students in 2023:

Honours Degree research projects and graduations

- a) Title: *China and South Africa's Economic Development*.
Student: **Gauata Makaleng**
Supervisor: **Dr Charity Nhemachena**
(Research theme: International Trade).
- b) Title: *The Socioeconomic Influence of the National Arts Festival in Makhanda Eastern Cape*.
Student: **Ngawo Mati**
Supervisor: **Dr Reesha Kara**
(Research theme: Human and Economic Development).
- c) Title: *Building Sustainable Livelihoods for Rural Cannabis for Private Purposes Bill 2020*.
Student: **Kgabane Lengane**
Supervisor name: **Professor Cyril Mbatha**
(Research theme: Human and Economic Development).
- d) Title: *Study of Rural Education Quality and its Post Secondary School Outcomes*.
Student name: **Siyamthanda Nomoyi**
Supervisor name: **Professor Martin Gustafsson**
(Research theme: Education and Skills Development).

Masters and PhD registrations

- a) **Ms Brynley van Aard** (ISER MCom student)
Supervisor: **Professor Mbatha**
- b) **Ms Namirembe Hudah Bawonga** (ISER PhD Commerce student)
Supervisor: **Professor Mbatha**
Co-supervisor: **Professor Rwelamila**

New Distinguished / Research Professors / Research Fellows and Associates

- a. Visiting Research Fellow - **Dr Steffen Otterbach** is currently a Postdoctoral researcher and lecturer at the Institute for Health Care and Public Management, University of Hohenheim, Stuttgart, Germany.
- b. Visiting Research Professor - **Professor Tabitha Nganga**, the national WTO Chair for Kenya in the University of Nairobi. She specialises in Trade Economics using gendered lens.
- c. Visiting Research Fellow - **Dr Faten Attig Bahar**, a climate change and renewable energy expert, from Tunisia, with a wealth of expertise in implementing both research and work programs in the area of energy technologies, energy systems modeling, climate mitigation and finance, the water-energy-food nexus, and the green transition.

Research Aligned Events

The ISER held a number of events aimed at promoting research findings with the broader public as well as a training workshop on Quantitative Data Analysis using public datasets.

- a) **Gender Mainstreaming in Kenya's Trade Agreements - The Africa Continental Free Trade Agreement**
Area: Cross Border Trade in Africa
Date: 8 August 2023
Research area: Gender and International Trade
Guest Speaker: **Professor Kiriti Nganga**, Professor of Economics in the Department of Economics and Development Studies at the University of Nairobi
Discussant: **Dr O. Oluwakemi Adeniyi**
Chair: **Dr Reesha Kara**, Researcher, Institute of Social and Economic Research (ISER) at Rhodes University.
- b) **The Politics of Improving Learning Outcomes in South Africa**
Area: Education and Skills Development
Date: 14 September 2023
Presenter: **Professor Martin Gustafsson**, Education economist and Associate Professor attached to the Research on Socio-Economic Policy (ReSEP) unit, which in turn is linked to the Department of Economics at Stellenbosch University
Respondent: **Mr David Fryer**, Political economist at Rhodes University's Department of Economics and Economic History
Chair: **Dr Reesha Kara**, Researcher, Institute of Social and Economic Research (ISER) at Rhodes University.
- c) **Big Food, Fast Food and Proximity to Supermarkets: Using Google Data to Measure the Role of Fast Food in South Africa's Obesity Epidemic**
Date: 28 September 2023
Research area: Human and Economic Development / Quality of Life
Presenters: **Dr Steffen Otterbach**, Postdoctoral researcher and lecturer at the Institute for Health Care and Public Management, University of Hohenheim, Stuttgart, Germany, and **Professor Michael Rogan**, Associate Professor at Rhodes University's Department of Economics and Economic History.



Some of the ISER coordinated Interdisciplinary Honours class members attending their orientation meeting in 2023, *from left to right*: Yondela Kalipa, Siyamthanda Nomoyi, Ms Ruvesen Naidoo, Gauta Makaleng and Ngawo Mati.

Photo: ISER.

Institute of Social and Economic Research (ISER)

Peer Reviewed Subsidy-Earning Journal Research Publications

Møller, V., Cocks, M. and Vetter, S.

Møller, V., Cocks, M. and Vetter, S. 2023 Nature-connectedness and well-being experienced during best and worst times of life: A case for safeguarding biocultural diversity. *The Journal of Social Indicators Research*.

Richards, R., Graham, L., and Mthembu, S.

Richards, R., Graham, L., and Mthembu, S. (2023). Then and now: Youth attitudes in South Africa over time. *Youth Voice Journal*. ISSN (online): 2056-2969 - acknowledged Møller's guidance.

Accredited journal articles submitted

Attig-Bahar, F.

Attig-Bahar, F. Enhancing photovoltaic performance through interfacial Engineering: A comparative analysis of bismuth iodide (BiI₃) and Cs₂BiAgI₆ as interlayer materials in the design of perovskite solar cells. *Solar Energy Journal*.

Attig-Bahar, F. Engagement of Early Career Researchers in Collaborative Assessments of IPCC Reports: Achievements and Insights. *Frontiers Journal*.

Hompashe, D.M.

Hompashe, D.M. *Do instructional leadership practices drive educational improvement gap in South Africa? Evidence from Oaxaca-Blinder decomposition analysis of TIMSS 2015 and 2019 study*. Submitted in Development Southern Africa 2023.

Møller, V., Roberts, B.J. and Zani, D.

Møller, V., Roberts, B.J. and Zani, D. 'Born free' dreams: South African township youth discuss their hopes for a better life in future. Submitted to Springer's Applied Research in Quality of Life (ARIQ).

Other Publications

Palmer, A., Gustafsson, M., Kara, R., and Mbatha, C.N.

Palmer, A., Gustafsson, M., Kara, R., and Mbatha, C.N. 2023. Revised - Future impacts and threats of climate change and socio-economic conditions on the Grass Fed Beef Value Chain in the Matatiele region of the Eastern Cape Province, SA. *Interim report 2, WWF-SA*.

Mpolwana, M., Mbatha, C.N., Lotz-Sisitka, H., Thifulufhelwi, R., and Kuse, M.

Mpolwana, M., Mbatha, C.N., Lotz-Sisitka, H., Thifulufhelwi, R., and Kuse, M. (2023). Participatory course to activate ecological infrastructure for water security learning networks. *Final report to the Water Research Commission (WRC)*. Pretoria.

Concerts, Exhibitions, Performances, Workshops, Events

Møller, V.

Møller, V. 2023. South African township youth share their lived experience of hope: A focus-group case study. *International Quality-of-Life Studies (ISQOLS) Conference: Towards a People-First Economy: A World to Win*. 21 - 25 August, 2023. Rotterdam, the Netherlands.

Møller, V. 2023 was invited to participate in the Nova Institute's meeting to discuss energy solutions and quality-of-life that affect South Africa's low-income households. *Development in the Anthropocene: The tough task of working towards planetary wellbeing with low-income households*. 21 October 2023. Pretoria, South Africa.

Møller, V. 2023 was invited to join the *UN Habitat's High Level Roundtable* with Academia discussion organised under the *Quality-of-Life Initiative*. Toronto, Canada, on October 31 and 1 November 2023. She attended online.

Møller, V. 2023. was invited to prepare a critical review of youth studies that would focus on *Relational Wellbeing (RWB)*. Relational well-being is a relatively new field of quality-of-life (QoL) studies, that has been pioneered mainly by positive psychologists. Her report was submitted to the HSRC in Cape Town on 15 February 2023.



Photo: Chris Marais.

RHODES UNIVERSITY

Institute for Water Research (IWR)



Professor Nelson Odume

Director

Introduction

In 2023 we received the exciting news of the promotion of three (3) academic staff within the IWR. **Sukmani Mantel** was promoted to the rank of Associate Professor. **Dr Chika Nnadozie** was promoted to the rank of Senior Researcher, and **Professor Nelson Odume** was promoted to the rank of Professor. I extend my warmest congratulations to these colleagues for the milestone achieved. It demonstrates commitment to excellence. Professor Elizabeth Mack of Michigan State University was appointed Visiting Professor to the IWR. This brings the total number of Visiting Professors to two (2), the other being Professor Jill Slinger who continued to play a lead role within the IWR.

The IWR continued to position itself within the water and related sectors as a leading research institute. The most exciting news for 2023 was the successful application to the National Research Foundation for the joint hosting of the Future Earth Africa Hub Leadership Centre at Rhodes University and the University of Pretoria. The Leadership Centre is a collaborative initiative between the Environmental Learning Research Centre (ELRC), Institute of Social and Economic Research (ISER) and the IWR at Rhodes University, and the Future Africa campus at the University of Pretoria. Future Earth is a global network of over 2000 scientists, practitioners and policy makers in the field of sustainability science. Currently funded by the NRF, the Leadership Centre aims to strengthen, grow, and deepen sustainability science on the African continent. We are pleased to be part of this exciting initiative.

ARUA and the Guild of Research-Intensive Universities in Europe have partnered to establish Clusters of Research Excellence (CoRE). Rhodes University, through the IWR, in partnership with the University of Ljubljana in Slovenia, submitted a successful application, and were awarded the CoRE on water resource management for a sustainable and just future. This is an exciting collaborative initiative that will further strengthen the work of the IWR. Similarly, the IWR is collaborating in two

(2) other CoREs, one focusing on Water and Land, and the other on climate change and nature-based solutions. Over the past five (5) years, the IWR has also been collaborating in the Africa Multiple Cluster of Excellence, which focuses on re-configuring African Studies. Overall, the Institute currently leads or co-leads five (5) strategic leveraging partnerships. There are currently six (6) research groups within the IWR, each led by a group leader, working collaboratively on different projects.

Postgraduates / Graduations

A total of six (6) students completed and obtained their degrees in 2023. These students are **Mr Anthony Fry** (PhD in Water Resource Science), **Mr Andrew Ali** (MSc in Water Resource Science with distinction), **Ms Zintle Mtinsilana** (MSc in Water Resource Science), **Ms Nandipha Ngoni** (MSc in Water Resource Science), **Ms Phatsimo Ramatsabana** (MSc in Hydrology) and **Ms Noleen Tavengwa** (MSc in Water Resource Science with distinction).

Distinguished Visitors / International Visits

The IWR had five (5) distinguished visitors in 2023. Professor Elizabeth Mack from Michigan State University, Dr Olivier Barreateau from INRAE in Montpellier University, Dr Victoria Chukwuemeka from Federal University of Technology, Ms Hasifa Mukyala from Makerere University, and Professor Cyrus Samimi from University of Bayreuth. Dr Barreateau and Professor Mack contribute extensively to the IWR through collaborative research projects and international linkages. Dr Chukwuemeka and Ms Mukyala, who is the Registrar College of Natural Sciences at Makerere University, were both visiting the IWR as part of the African Water Resources Mobility Network (AWaRMN), funded by the Intra-Africa Academic Mobility Scheme. Professor Samimi visited the IWR as part of the Africa Multiple Cluster of Excellence initiative.

Professor Nelson Odume and **Dr Jane Tanner** (represented by **Emeritus Professor Tally Palmer**) were invited by the UNESCO Centre at the University of Montpellier to partner with it and twelve (12) other universities to set up an international, interdisciplinary and intercultural collaborative PhD Platform. The other universities are the Australian National University (AU), Dublin City University (IE), Dundee University (UK), IHE Delft (Netherlands), University Cheikh Anta Diop of Dakar (Senegal), Félix Houphouët-Boigny (Côte d'Ivoire), University Mohamed 6 Polytechnique (Morocco), Université Laval (Canada), Université de Sherbrooke (Canada), University of Barcelona (Spain), and University of California (Irvine). The platform is intended to enrich the PhD experiences of candidates through exchanges, mobility and joint collaborative training. The first cohort is expected to commence their Autumn School in 2024 in Morocco.

The Institute for Water Research continued to position itself within the water and related sectors as a leading research institute.

Ms Margaret Wolff and **Dr Rebecka Henriksson** attended the ARUA Centres of Excellence Directors meeting that took place in Mauritius on 23rd and 24th February 2023. The meeting brought together the Centre Directors and Managers of the thirteen (13) ARUA CoEs.

Dr Chika Nnadozie was invited to the Joseph Ki-Zebo University in Burkina Faso as part of the process of applying for the Cluster 2.0 of the Africa Multiple Cluster of Excellence, funded by the German Government. Professor Odume attended the Academic Coordinator's Meeting at Mooi University. This meeting is an avenue for the Academic Coordinators of the Africa Multiple Cluster of Excellence to discuss the academic programme of the entire cluster initiative.

Significant Research Aligned Events

The IWR staff and students attended a number of local and international conferences. These include the Society for Freshwater Science conference in Brisbane Australia attended by Professor Odume, Dr Nnadozie and Dr Akamagwuna. The 4th ARUA Biennial International Conference, hosted at the University of Lagos, Nigeria from November 15 to 17 November 2023, centred around the theme "Reimagining the Future of Higher Education in Africa." The Institute through the CoE participated in the 4th ARUA Biennial International conference hosted at the University of Lagos. Dr Jane Tanner, Dr Matthew Weaver and Dr Rebecka Henriksson, all presented papers at this conference.

The Future Earth Africa Hub Leadership Centre was formally launched during the Sustainability Research and Innovation Conference (SRI) Africa Satellite event that took place from 20 to 22 June 2023 in Gqeberha (Port Elizabeth). Professor Odume moderated a session on Strengthening Global South Research Leadership at this conference.

Institute for Water Research (IWR)

Concerts, Exhibitions, Performances, Workshops, Events

Odume, N.O.

Mbatha, C., Lotz-Sisitka, H., Odume, N.O. and Hackman, H. Workshop. Future Earth Africa Hub Leadership Centre Workshop. *FEAHL Centre Seminar*. University of Pretoria, Pretoria. South Africa. 27 - 28 November 2023.

Other Publications

Palmer, A.R.

Mbatha, C.N., Kara, R.A. and Palmer, A.R. (2023). Revised - Future impacts and threats of climate change and socio-economic conditions on the Grass Fed Beef Value Chain in the Matatiele region of the Eastern Cape Province, SA. Interim report 2, WWF-SA. In: Palmer, A., Gustafsson, M., Kara, R. and Mbatha, C. (eds.). *Revised - Future impacts and threats of climate change and socio-economic conditions on the Grass Fed Beef Value Chain in the Matatiele region of the Eastern Cape Province, SA. Interim report 2, WWF-SA*.

Mantel, S.K. and Hughes, D.A.

Mantel, S.K. and Hughes, D.A. (2023) The occurrence of farm dams in southern Africa and the balance between environmental and socio-economic sustainability. In: *Dam Engineering - Design, Construction, and Sustainability. Open Access IntechOpen Civil Engineering book series*. Reviewed manuscript submitted October 2023. Publication by November 2023.

Peer Reviewed Non-Subsidy-Earning Journal Research Publications

Wasswa, P.

Odongo, R.I., Nakanwagi, M.T., Mugume, I., Nsabagwa, M., Nimusiima, A., Ogwang, B.A., Margaret, A., Nahayo, S., Nalwanga, F.S., Sansa-Otim, J., Musiime, I., Kakuru, R., Mwije, A. and Wasswa, P. (2023) Evaluation of soil fertility status in the Kyoga Basin of Uganda: A physio-chemical study in Buyende and Serere districts. *African Journal of Agricultural Research*. 19 (10). p.935-944.

Wasswa, P., Namulindwa, H., and Nakiwala, E. (2023). Assessing the Efficacy of Integrating Indigenous Knowledge Systems Into Modern Weather Observational Instruments, a Case of Uganda. *Journal of Environmental and Earth Sciences, Atmospheric Science and Meteorology*. (<https://doi.org/10.20944/preprints202304.0065.v1>).

Peer Reviewed Subsidy-Earning Journal Research Publications

Akamagwuna, F.C.

Edegbene, A.O., Elakhame, L.A., Arimoro, F.O., Osimen, E.C., Akamagwuna, F.C., Edegbene Ovie, T.T., Akumabor, E.C. and Njuguna, C.W. (2023) Preliminary studies on macroinvertebrate biomonitoring of freshwater systems in the Afrotropics: a case study of the Chanchaga River in the Lower Niger-Benue Ecoregion of Nigeria. *Biologia*. 78 (2023). p.1-17.

Edegbene, A.O., Elakhame, L.A., Arimoro, F.O., Osimen, E.C., Edegbene, O.T.T., Akumabor, E.C., Ubanatu, N.C., Njuguna, C.W., Sankoh, A.A. and Akamagwuna, F.C. (2023) How do the traits of macroinvertebrates in the River Chanchaga respond to illegal gold mining activities in North Central Nigeria. *Frontiers in Ecology and Evolution*. 11 (2023). p.1-11.

Akamagwuna, F.C. and Odume, N.O.

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macroinvertebrate composition in a South African river system. *Environmental and Sustainability Indicators*. 18 (2023). p.1-12.

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Chibwe, M., Odume, N.O. and Nnadozie, C.F. (2023) Assessment of risk of exposure to *Campylobacter* species and their antibiotic-resistant genes from selected rivers in the Eastern Cape, South Africa. *Environmental Pollution*. 338 (2023). p.1-9.

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Lombard, A.T., Clifford-Holmes, J.K., Goodall, V., Snow, B., Truter, H., Vrancken, P., Jones, P.J.S., Cochrane, K.L. and et al. (2023) Principles for transformative ocean governance. *Nature Sustainability*. 2023 (2023). p.1-16.

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Copteros, A., Karkou, V. and Palmer, C.G. (2023) Experiencing principles of dance movement therapy practice within transdisciplinary environmental research in South Africa. *Body, Movement and Dance in Psychotherapy*. 2023 (2023). p.1-34.

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Ezenne, G.I., Eyibio, N.U., Tanner, J.L., Asoiro, F.U. and Obalum, S.E. (2023) An overview of uncertainties in evapotranspiration estimation techniques. *Journal of Agrometeorology*. 25 (1). p.173-182.

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Gusha, B., Palmer, A.R. and Zondani, A. (2023) Assessing Livestock Grazing Distribution in Communal Rangelands of the Eastern Cape, South Africa: Towards Monitoring Livestock Movements in Rangelands. *Land*. 12 (4). p.1-15.

Gwapedza, D.R., Hughes, D.A., Slaughter, A.R. and Mantel, S.K.

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Nnadozie, C.F. and Ngoni, N. (2023) A method of recovering the very low concentration of pathogens in river water by combining centrifugation and membrane filtration. *MethodsX*. 11 (2023). p.1-4.

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Shackleton, S., Taylor, A., Gammage, L., Gillson, L., Sitas, N., Methner, N., Barnard, S., Thorn, J., McClure, A., Cobban, L., Jarre, A. and **Odume, N.O.** (2023) Fostering transdisciplinary research for equitable and sustainable development pathways across Africa: what changes are needed? *Ecosystems and People*. 19 (1). p.1-17.

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Bennett, J., Marandure, T., Hawkins, H.-J., Mapiye, C., **Palmer, A.R.**, Lemke, S., Wu, L. and Moradzadeh, M. (2023) A conceptual framework for understanding ecosystem trade-offs and synergies, in communal rangeland systems. *Ecosystem Services*. 61 (101533). p.1-10.

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Palmer, C.G. and Tanner, J.L.

Palmer, C.G., Tanner, J.L., Akanmu, J., Alamirew, T., Bamutaze, Y., Banadda, n., Cleaver, F., Kabenge, I., Longe, E., Winter, K. and et al. (2023) The Adaptive Systemic Approach: Catalysing more just and sustainable outcomes from sustainability and natural resources development research. *River Research and Applications*. 2023 (2023). p.1-15.

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Lodder, Q.J., **Slinger, J.H.**, Wang, Z.B., Van Der Spek, J.F., Hijma, M.P., Taal, M., van Gelder-Maas, C., de Looff, H., Litjens, J. and *et al.* (2023) The Coastal Genesis 2 research programme: Outputs, Outcomes and Impact. *Ocean and Coastal Management*. 237 (1). p.1-13.

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Tumwesigye, T.E., Nnadozie, C.F., Akamagwuna, F.C., Siwe Noundou, X., Nyakairu, G.W.A. and Odume, N.O. (2023) Microplastics as vectors of chemical contaminants and biological agents in freshwater ecosystems: Current knowledge status and future perspectives. *Environmental Pollution*. 330 (121829). p.1-11.

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Weideman, C.I., Palmer, A.R., Palmer, C.G. and Smart, K. Differences in carbon sequestration and water use between a semi-arid native grassland and encroaching *Vachellia karroo* woodland. *International Grassland Congress*. Covington, Kentucky. USA. June 2023.

Palmer, C.G., Gusha, B. and Tanner, J.L.

Palmer, C.G., Tessema, Z.W., Bantider, A., Gusha, B. and Tanner, J.L. Applying the transdisciplinary Adaptive Systemic Approach to securing the long-term future of grassland ecosystems. *Proceedings of the XXV International Grassland Congress*. Covington, Kentucky. USA. May 2023.

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Xoxo, S., Tanner, J., Mantel, S., Gwapedza, D., Paxton, B., Hughes, D. and Barreteau, O. (2023, May). Chapter 11 - Equity-Based Allocation Criteria for Water Deficit Periods: A Case Study in South Africa. In: *International Conference on Decision Support System Technology (pp. 137-155)*. Cham: Springer Nature Switzerland.

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Odume, N.O.

Mbatha, C., Lotz-Sisitka, H. and Odume, N.O. Introducing the Future Earth Africa Hub Leadership Centre. *NRF SRI 2023 Africa Satellite Event*. Nelson Mandela University, Gqeberha. South Africa. June 2023.

Lazar, S., Griffin, N., Slaughter, A. and Odume, O.N.

Lazar S., Griffin, N., Slaughter, A.R. and Odume, O.N. (2023) A case study of water quality degradation in the Grootdraai Dam catchment due to climate change. *Oral presentation at the 2023 Society for Southern Africa Aquatic Scientists (SASAqS)*. 25 - 29 June 2023.

Owowenu, E.K., Nnadozie, C.F., and Odume, O.N.

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Akamagwuna, F.C., Mensah, P.K. and Odume, O.N. (2023) Taxonomic and trait-based distribution of Odonata in relation to sediment stress and grain sizes in rivers. *Oral presentation at the 2023 Society for Southern Africa Aquatic Scientists (SASAqS)*. 25 - 29 June 2023.

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Osoh, M.O., Nnadozie, C.F. and Odume, O.N. (2023) Response of chironomids to aquatic pollution in urbanised catchment in Eastern Cape, South Africa. *Oral presentation at the 2023 Society for Southern Africa Aquatic Scientists (SASAqS)*. 25 - 29 June 2023.

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Photo: Chris Marais



RHODES UNIVERSITY

South African Institute for Aquatic Biodiversity (NRF-SAIAB)

Introduction

The South African Institute for Aquatic Biodiversity (NRF-SAIAB) is a national facility of the National Research Foundation (NRF). NRF-SAIAB has developed a number of unique platforms that facilitate undertaking of world-class research, contributing towards improving the quality of life for all South Africans and beyond. The Institute's activities - research, student supervision and platform provision - support the higher education sector in the education, training and development of the next generation of aquatic researchers and managers.

The NRF emphasises the importance of re-imagining research through principles such as knowledge advancement, innovation, multi- and trans-disciplinarity, Open Science, Responsible Research Advancement (RRA), and institutional commitment. At NRF-SAIAB, researchers, Postgraduates, Postdoctoral Research Fellows, and Honorary Research Associates embody these principles to address the evolving curiosity and societal-driven needs in the aquatic realm. This transformative and impactful research is supported by NRF-SAIAB's unique research infrastructure platforms, accessible to the broader research community within the National System of Innovation (NSI). In 2023, two hundred and nine (209) individuals and fifty-two (52) organisations utilised these platforms. NRF-SAIAB actively collaborates with universities and government bodies to tackle pressing environmental issues, integrating evidence-based science with management to inform national policies. Their research spans socio-economic development, water security, ecosystem degradation, and the impacts of climate change on food security. Collaborative science is central to NRF-SAIAB's efforts, with strong collaborations both nationally and internationally.

NRF-SAIAB and Rhodes University (RU) have a longstanding collaboration, with the latest development being the establishment of a joint Computer Vision Laboratory, aimed at accelerating the recognition and identification of fish species from underwater videos using machine learning algorithms.



Dr Albert Chakona
Chief Scientist



Representatives from NRF-SAIAB and ACEP Phuhlisa Steering Committee members, from University of the Western Cape, University of Fort Hare and Walter Sisulu University with the UNIZULU DVC, with researchers and Postgraduate students during the launch of the DSI/NRF-SAIAB/UNIZULU Joint Marine Laboratory for Ecotoxicology. Photo: NRF-SAIAB.

NRF-SAIAB has established a working group with researchers in the Mathematics and Computer Sciences Departments at Rhodes University to bolster this innovative initiative on aquatic biodiversity, Artificial Intelligence and Computer Vision. Several students have already registered for projects analysing the data generated from NRF-SAIAB's Baited Remote Underwater Video systems (BRUVs) to optimise analysis time and expedite reporting on the status of marine ecosystems. Other innovative initiatives include bioprospecting for novel marine compounds, a joint initiative with the Microbiology Department working with Professor Rosemary Dorrington (DSI/NRF SARCHI Professor: Marine Natural Products Research), and development and expansion of the Aqualab that is jointly managed by NRF-SAIAB and the DIFS. All NRF-SAIAB scientists are members of the Faculty of Science at Rhodes University and, as a result, most of the supervised students are hosted at Rhodes University.

Postgraduates / Graduations

In 2023, NRF-SAIAB researchers and Honorary Research Associates supervised a total of forty-seven (47) Postgraduate students. The Institute is making concerted efforts to supervise a transformed cohort of Postgraduate students, with thirty-eight (38) of the forty-seven (47) (81%) being South Africans from designated groups. Four (4) MSc students and eight (8) NRF-SAIAB supervised PhD candidates obtained their degrees through Rhodes University in 2023. Some of the PhD graduates have joined the NRF-SAIAB research team as NRF PDP and Postdoctoral Fellows. The students participated in various regional and international conferences, workshops, research visits and expeditions. NRF-SAIAB held the 5th instalment of the Institute's Annual Student symposium in November 2023. NRF-SAIAB students and researchers attended conferences or undertook research visits to sixteen (16) countries in 2023: United Kingdom, Netherlands, Portugal, France, La Reunion Island, Malawi, Mozambique, Republic of Congo, Australia, Norway, Brazil, India, Angola, New Zealand, Eswatini and Costa Rica.

Significant Research Aligned Events

NRF-SAIAB is driving change both within the Institute and in the broader National System of Innovation. One of the Institute's flagship programs, the ACEP Phuhlisa Programme, was initiated to accelerate transformation by purposefully establishing collaborations with HDIs. Key milestones include the launch of four state-of-the-art laboratories through the Joint Marine Laboratories (JMLs) Programme. These laboratories are the Bio-economy and Bio-discovery Laboratory at Fort Hare University, the Laboratory for MicroPlastics and Coastal Research at the University of the Western Cape, Laboratory for Marine and Estuarine Ecotoxicology at the University of Zululand and the Rural Coastal Sustainability Laboratory at Walter Sisulu University. These facilities provide advanced equipment and support researchers and students within these institutions as well as external users.

The research infrastructure platforms and research undertaken at the NRF-SAIAB are aligned with several national and international protocols, including contributing towards achieving strategic targets of the National Development Plan, the Department of Science and Innovation's Decadal Plan, and the UN's Sustainable Development Goals. The NRF-SAIAB has built capabilities to undertake research up to 1000-meter depth in the sea, distinguishing the Institute as one of the unique platforms with such capabilities on the African continent. NRF-SAIAB's integrated research platforms continue to advance research on marine and freshwater ecosystems, cutting across the entire spectrum from genes to ecosystems. Findings from research at the NRF-SAIAB has influenced policy development, designation and expansion of Marine Protected Areas, National Biodiversity Assessments, designation of National Freshwater Ecosystem Priority Areas, fish sanctuaries, Key Biodiversity Areas, control of invasive species, informing aquaculture development, and eco-friendly coastal engineering.

NRF-SAIAB has taken proactive steps to address the multifaceted impacts of invasive species on the environment, economy and society. By securing the SARChI Chair in Biological Control and appointing Professor Julie Coetzee to this position (jointly with RU's Center for Biological Control), both institutions are poised to lead and advance research efforts in biocontrol methods for managing invasive species in southern Africa, with a long-term vision to expand to other regions on the African continent. This strategic focus acknowledges the critical role of research in developing innovative solutions to safeguard freshwater ecosystems, which are crucial for South Africa's (and indeed Africa's) water security and associated ecosystem services for the benefit of society, economies and ecological systems.

The Marine Research Infrastructure Platform (MARIP) at NRF-SAIAB has been working on the development of deep-sea baited stereo-video landers that can remotely observe animal assemblages close to the seafloor. Prior to 2023, the equipment had been successfully trialed in relatively benign tropical conditions. However, South Africa's marine environment is anything but benign, with rough seas and extreme oceanic current making ship-based deep-sea research operations exceptionally challenging. In 2023, during the ACEP deep-sea research capacity-building cruise, researchers were able to test the equipment on the shelf edge and slope environments offshore of East London. Footage was successfully collected from depths between 200 and 1000 meters directly beneath the Agulhas Western Boundary Current.

The Freshwater Research Unit successfully completed a large joint research contract project that generated the most comprehensive dataset to date on the distribution of Mozambique and Nile tilapia in three provinces: Limpopo, Mpumalanga and KwaZulu-Natal. The NRF-SAIAB/SANBI/DFFE Nile Tilapia project demonstrates the successful convergence of the quadruple helix actors (academia, government, industry and societal partners) in the co-creation of data to guide science-based decision making to guide potential aquaculture development in the country. Co-creation is integral to overcoming

obstacles, improving the uptake of scientific knowledge, and ultimately contributing towards achieving the balance between environmental sustainability and societal impact.

The NRF-funded Indigenous Marine Innovations for Sustainable Environments and Economies (IMIsEE) project integrates traditional African indigenous knowledge with modern scientific insights to promote healthy and sustainable coastlines in the country. This transdisciplinary initiative gained considerable traction in 2023 and has the potential to profoundly impact coastal communities. It addresses environmental challenges while fostering cultural preservation, community empowerment, and sustainable economic development. Through the transformative integration of science and art, the IMIsEE project represents a paradigm shift in coastal management approaches, and holds the potential to provide long-term benefits for both the environment and the communities whose livelihoods directly rely on marine ecosystem services. Project partners, among others, include eco-musicologists from the International Library of African Music (ILAM) at Rhodes University. The study merges the arts, pedagogy and music components to link science with the environmental indigenous knowledge shared by the community partners through storytelling and music.

NRF-SAIAB continues to maintain high academic standards in research, student supervision, and the platforms that are provided to the broader NSI. This is evidenced by exceptional research outputs, such as one hundred and thirty-two (132) peer-reviewed publications (these include early views) produced in 2023, the number of Postgraduate students who completed and obtained their degrees in 2023, as well as the engagements at national, regional and international levels through conferences and research visits.

NRF-SAIAB actively collaborates with universities and government bodies to tackle pressing environmental issues, integrating evidence-based science with management to inform national policies.



Dr Ntuthuko Masikane (the PI and UNIZULU Zoology Senior Lecturer) demonstrating the use of the innovative equipment in the newly launched lab to the UNIZULU DVC.

From left to right: Professor Nokuthula Kunene, UNIZULU Zoology Department HOD; Professor Leon Vivier, NRF Acting DCEO; Dr Angus Paterson, NRF-SAIAB Acting MD; Dr Albert Chakona and NRF-SAIAB ACEP Phuhlisa Programme Manager; Mr Garth van Heerden.

Credit: NRF-SAIAB.

South African Institute for Aquatic Biodiversity (NRF-SAIAB)

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Group photo of the IMISEE Project team members from NRF-SAIAB, Rhodes University Department of Music and Musicology and Keiskamma Trust. Photo: NRF-SAIAB.

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The REFRESH Team at the Congo River rapids, while attending the PAFFA Conference in Brazzaville, Republic of Congo.

Left to right: Dr Tadiwa Mutizwa, Dr Martinus Scheepers, Professor Albert Chakona, Graça Mandava Jaime, Dr Yonela Sithole, and Dr Pedro Bragança.

Photo: NRF-SAIAB.





Attendees at the NRF-SAIAB Annual student symposium at the Amazwi Museum, Makhanda, in November 2023. Photo: NRF-SAIAB.

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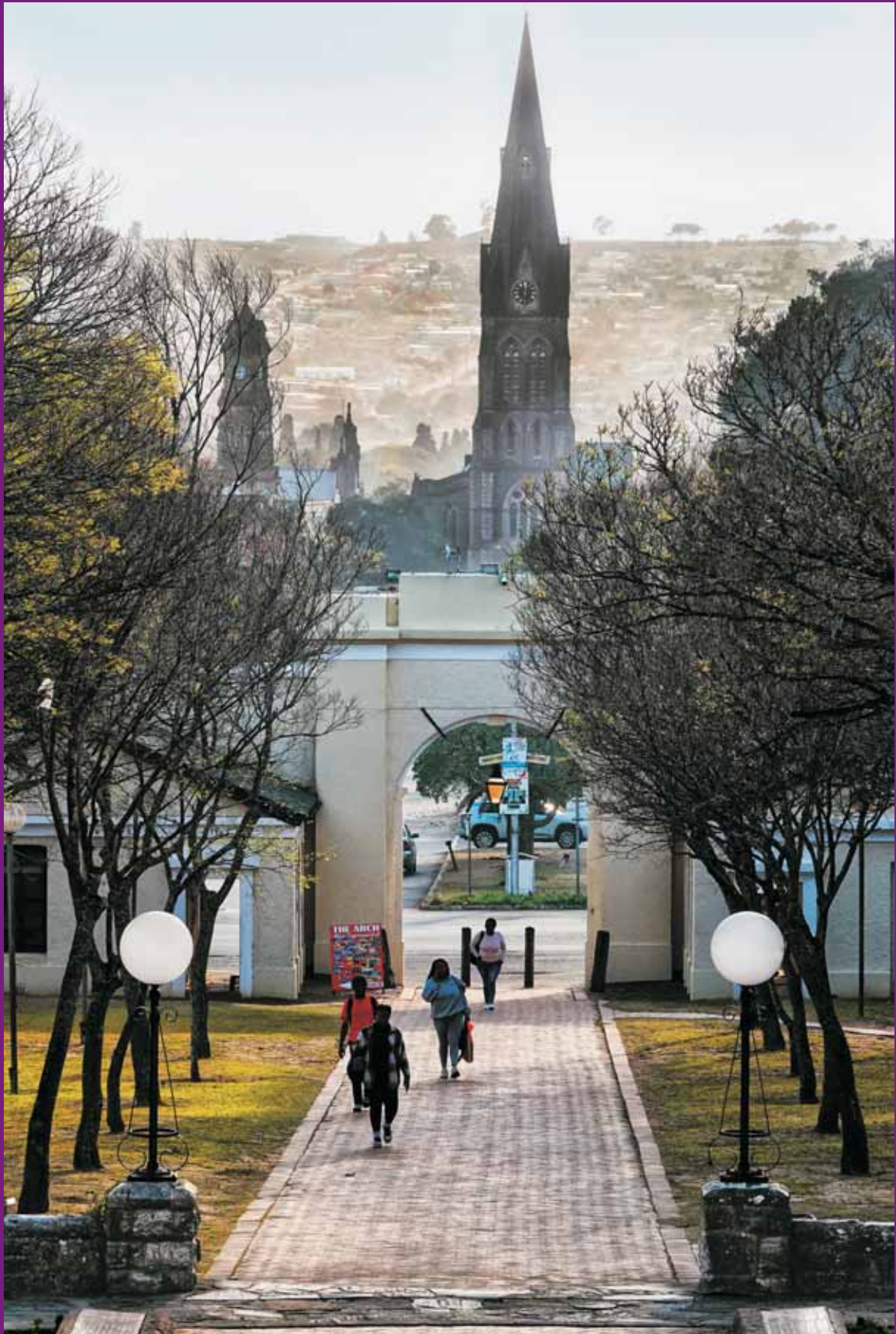
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