

ORDER OF PROCEEDINGS

(virtual graduation ceremony)

The Chancellor will constitute the Congregation.

The Vice-Chancellor will welcome the Congregation.

The Chancellor will confer degrees *in absentia*.

Honorary Doctorate **Professor Patricia Ann Whitelock**
Degree of Doctor of Laws, *Honoris Causa*.

Vice-Chancellor's Distinguished Senior Research Award
Professor Makaiko Chithambo

The National Anthem.

The Chancellor will dissolve the Congregation.

INKQUBO

(Uthweso-zidanga lwamajelo asemoyeni)

UNgqonyela umisela iNgqungquthela.

USEkelangqonyela wamkela iNgqungquthela.

UNgqonyela unikezela ngezidanga kubaninizo *abangekhoyo* phambi kwakhe.

UNjingalwazi Patricia Ann Whitelock uwongwa ngesiDanga sobuGqirhalwazi kwezoMthetho, *Honoris Causa*.

IMbasa yokuba nguMphandilwazi ogqwesileyo nosele enamava.
Njingalwazi Makaiko Chithambo

UMhobe weSizwe.

UNgqonyela uvala iNgqungquthela.

VOLGORDE VAN VERRIGTINGE

(virtuele gradeplegtigheid)

Die Kanselier sal die vergadering tot orde roep.

Die Vise-Kanselier sal die vergadering verwelkom.

Die Kanselier sal grade *in absentia* toeken.

Eredoktoraat **Professor Patricia Whitelock**
Doktorsgraad in die Regte, *Honoris Causa*.

Vise-Kanselier se Senior Navorsingstoekenning.
Professor Makaiko Chithambo

Die Volkslied.

Die Kanselier sal die vergadering verdaag.

FACULTY OF SCIENCE

DEGREE OF BACHELOR OF SCIENCE

ABDULRAHIM, Fathima Zahra
ACKERMANN, Bill Francois
ALLISON, Caitlin, **with distinctions in Ichthyology and Zoology**
ANDERSON, Robyn Jane, **with distinction in Biochemistry**
ARNOLDI, Marco
AYLIFFE, Jamie, **with distinction in Ichthyology**
BAILEY, Amy Leigh, **with distinction in Biochemistry**
BALMER, Natasha Louise, **with distinction in Entomology**
BENJAMIN, Jonathan
BISSESAR, Sivesha
BURNETT, Scott, **with distinction in Computer Science**
CAMPBELL, Kaylee Maria
CARKEEK, Richard Hilton
CAWE, Zuko Njica
CHAUKE, Masego Maria
CHAVALALA, Ridge Nhlamulo
CHIVUNGWA, Chido
COLLETT, Alexandra
DAMBUZA, Khalipha
DESAI, Ammaarah, **with distinction in Information Systems**
DINISO, Siphesihle
DLULISA, Zenande Naledi
DREYER, Nicola Bondi, **with distinction in Ichthyology**
DU PREEZ, Aidan Matthew
EBING, Kelly, **with distinction in Economics**
EVANS, Nicola May, **with distinction in Geography**
EVERS, Emma Else Maria, **with distinctions in Ichthyology and
Zoology**
FARQUHARSON, Rebecca Frances
FIHLANI, Anelisiwe
GLOVER, Robert Archar Glover
GOVENDER, Myren
GOWAR, Alexander James

GOWER, Sarah Elizabeth
GREEN, Dylan Conor
GUMENGE, Sigqibo Daluxolo Maqhawe
GWILLIAM, Teri Hazel, **with distinctions in Geography and Human Kinetics & Ergonomics**
HAGEMANN, Matthew Gary
HARMSE, Tiaan André, **with distinction in Geography**
HARVEY, Oliver Ross
HERBST, Scott Jeffrey
HIESTERMANN, Neil Andrew
HJUL, Karl Iver Hansen
HORNE, Kelsey Jade
JACKSON, Emily Anne
JACKSON, Gabriella Teresa, **with distinction in Human Kinetics & Ergonomics**
JALI, Mkululi
JAMES, Jacqui Anne Susan, **with distinctions in Botany and Entomology**
JAMES, Lauren May Colleen, **with distinctions in Botany and Entomology**
JOHNSTONE, Shawn Douglas
KIRK, Sarah St Claire
KLAAS, Bagcine Theko
KUMALO, Mthawethemba
LANDU, Zenande
LEECH, Keegan Kai, **with distinction in English**
LEHABE, Karabo Petrus
LESHILO, Theodora Ramatsimele
LIDZHADE, Ipfi
LUBBE, Alicea
MAGWAZA, Temlandvo Matshidiso
MAKELENI, Vuyelwa
MAKGALE, Salome Dintle
MAKHATHINI, Bongekile Nontokozo Makhosazana
MAKHETHE, Relebohile Grace
MAKOMBE, Kimberley Ruvimbo Esnath

MAKRWANANA, Lusanda, **with distinction in** Mathematical
 Statistics

MAKWARELA, Zwikhodo Precious

MALATJI, Surprice

MALINGA, Nonjabulo Senamile

MANCIYA, Avela

MANTSHIYOSE, Abenathi

MARELE, Asive

MASOKA, Bonolo, **with distinctions in** Biochemistry **and** Human
 Kinetics & Ergonomics

MATLAPENG, Tsebang Alice

MATSHIPA, Shamain

MATSOSO, Lineo Manthatisi

MAYER, Ludovic Philip Gaetan

MBIYO, Vusumzi Ayanda

MBUYISA, Yenziwe Ngenzeni

MC NEILL, Rory Liam

MDIKWA, Ezile

MDINISWA, Teboho

MDLULI, Siphwayinkosi

MEIKLEJOHN, Andrew Keith, **with distinction in** Ichthyology

MEKO, Keitumetse

MNCWABE, Zamaqondi Nothemba

MNGWENGWE, Bongeka Naledi Precious

MOHLALA, Canatia Vuyisile

MPOFU, Carlton Zidane, **with distinction in** Computer Science

MQWATHI, Nomxolisi Vuyokazi

MSUTU, Tumelo

MTATI, Avuyile

MTHEMBU, Joregina, **with distinction in** Information Systems

MTSWENI, Vanessa Silindokuhle

MULLER, Gabriel Alexander, **with distinction in** Applied
 Mathematics

MURRAY, Lucy Jill

NAIDOO, Urisha Tirah, **with distinctions in** Biochemistry **and**
 Microbiology

NCANYWA, Sibusiso

NDLOVU, Knowledge Siyabonga
NDOVELA, Lindokuhle Amanda
NEL, William Andrew
NGWANE, Jabulani
NGWENYA, Sokhana Simbongile
NICHOLLS, Orby Hugh Raulph
NQAYI, Yolanda
NTENDA, Avuzwa
NTENE, Mookho Florence
NZAMA, Londeka Melody
PALEDI, Dimpho Taile
PAUL, Camron Calista
PAWANDIWA, Tapiwa Zvadaishe Mutsa
PITSI, Lesedi Quinton
PULE, Boitshoko Patience
PULE, Rethabile Bongani
PUTZIER, Rachel Rayne, **with distinction in** Environmental Science
RICHARDSON, Perryn Heather, **with distinction in** Entomology
ROSS, Gareth Jordan
RULUMENI, Linda
SIBANDA, Everjoy Ntiapi
SIHLEZANA, Mfuneko Zukile
SIYENGO, Kwanele, **with distinction in** Geography
SKINNER, Daniella Helen
SOMPETA, Noxolo Excelsior
STARBUCK, Megan
STEUNENBERG, Keith, **with distinction in** Environmental Science
SWIFT, Matthew
TAKA, Maretselisitsoe Elsie
THABEDE, Siphokazi Sibusisiwe Zintle
THEKISO, Nicolas, **with distinction in** Mathematical Statistics
THUSI, Ayanda Xolani
TOOLEY, Daniel
TSEHLOANE, Teboho Emmanuel
TSELE, Tumakgole
TSHABALALA, Thulani
TSHIQI, Thandisile Naledi

TYHALI, Akhona
VAN DYK, Redelinghuys
VANQA, Kamvalethu
VISAGIE, Robin
WAGENAAR, Emma Kate, **with distinction in** Psychology
WAREHAM, Joshua
WATSON, Jessica Lois, **with distinctions in** Biochemistry **and**
Microbiology
WEBB, Caitlin Jeanne
WEBSTER, Simon David
XEGO, Mhlali
YOLI, Xolisa
YOSE, Papama
YU, Jialin
ZOYA, Sesona
ZUMANI, Vuyolwethu, **with distinction in** Mathematical Statistics

DEGREE OF BACHELOR OF SCIENCE
(Information Systems)

BUWA, Lubabalo, **with distinctions in** Computer Science **and**
Information Systems
HOBO, Mawande
LEWIS, Matthew David, **with distinction in** Computer Science
MCMICHAEL, Nicholas Andrew
MONYEMANGENE, Mautla Tumelo
MURIITHI, Gibson Munene
WOLFF, Damon Staude

DEGREE OF BACHELOR OF SCIENCE WITH HONOURS

BALINTULO, Putuma, in Environmental Science
BALL, Kirsty-Lee, in Human Kinetics & Ergonomics
BELL, Emma Catherine, in Human Kinetics & Ergonomics
BEN-DAVID, Ilan, in Economics, **with distinction**

BENNETT, Tahnee Tashia, in Entomology
CESLER, Lia, in Ichthyology & Fisheries Science
CHABANA, Chabana Ernest, in Information Systems
CHANAIWA, Beverly Tendai, in Biotechnology
CHIFAMBA, Tavonga Delroy, in Information Systems
CHIYOKA, Jordan Tinodaishe, in Information Systems
CHIZEMA, Tinashe Roy, in Information Systems
DAMJI, Amira Mahamood, in German Studies
DE BRUYN, Elrico, in Human Kinetics & Ergonomics, **with distinction**
DE LA HARPE, Daniel Henri, in Computer Science, **with distinction**
DE SOUZA, Sergio-Luke, in Geology
DELPORT, Janais, in Entomology
DEYI, Avuya, in Information Systems/Mathematics
DEYI, Lungile, in Biotechnology
DHAVER, Priyashini, in Biochemistry
DILLON, Patrick Francis, in Geography
DIXON, Russell Bruce, in Ichthyology & Fisheries Science, **with distinction**
DLEPU, Phelokazi, in Human Kinetics & Ergonomics
DLOBOYI, Asisipho Vanessa, in Microbiology
DOHERTY, Matthew Kieran Frank, in Computer Science
DU PLESSIS, Michael Pierre, in Computer Science
DU TOIT, Skye Carol, in Biochemistry
DUBE, Dennis Kuzivakwashe Sanele, in Geology
DUDHA, Nabeelah Adam, in Biochemistry
FABA, Yonela, in Economics
FORSTER, Shaan Nance, in Biochemistry
FOUCHE, Dean John, in Computer Science
FRANS, Phelokazi, in Biotechnology
FREEMAN, Amy-Lee, in Geography, **with distinction**
FUMBA, Okuhle, in Economics
GASURA, Joseph Mufaro, in Management
GAYIZA, Mihle, in Ichthyology & Fisheries Science
GCAKASI, Monis Nolitha, in Geology
GOBOZI, Sinakho, in Applied Mathematics

HAMLOMO, Sisipho, in Mathematical Statistics/Mathematics, **with distinction**

HAND, Francis Bryan, in Biotechnology

HARRIS, Jaimee, in Entomology, **with distinction**

HASHE, Lithalethu, in Biotechnology

HOOSEN, Naadiya, in Geology, **with distinction**

HORN, Dane Seymour, in Computer Science, **with distinction**

HUNT, Stephen James, in Computer Science, **with distinction**

ILUNGA, Nathan Nyembo, in Microbiology

IYAMBO, Elago Martha, in Ichthyology & Fisheries Science

JOHNSTON, Christopher Roy, in Botany/Environmental Science

JOKAZI, Mbulelo, in Chemistry

JONAS, Khanya Zimkhitha, in Geography

JONES, John, in Botany

KENYON, Thomas, in Biochemistry, **with distinction**

KGOMOESWANA, Mogotladi Letago, in Geography

KINCAID, Robert Daniel, in Mathematics/Physics, **with distinction**

KNOCK, Joshua Desmond Brian, in Biotechnology

KRUGER, Samantha Jayne, in Zoology

LANGLEY, Corbyn Rhys, in Computer Science

LOBOW, Royston Mario, in Geology

LOCKINGTON, Kirsten Judy, in Ichthyology & Fisheries Science

LUPHADE, Nonhlanhla Linda, in Mathematical Statistics/Mathematics

LWANA, Amanda, in Geography

MABASO, Vutomi, in Biotechnology

MABULE, Amandah, in Chemistry

MADLALA, Njabulo Praiseworthy, in Ichthyology & Fisheries Science

MAHLAULE, Thokozani, in Mathematical Statistics

MAKGAKA, Thato Leon, in Chemistry

MAMBU, Msimelelo, in Information Systems

MAMPHEY, Maame Nicole, in Biotechnology, **with distinction**

MARAMBO, Emillio Itai, in Computer Science

MARIMA, Edmore, in Geology

MAROPE, Thato, in Information Systems

MASAMVU, Natsai, in Computer Science/Information Systems

MASHINGAIDZE, Tsungai Vesta, in Biochemistry

MASON, Brooke Shanon, in Ichthyology & Fisheries Science

MASUKU, Nkosazane Bha, in Geography, **with distinction**
MATANDIROTYA, Lorraine Tariro, in Biochemistry, **with distinction**
MATTHIS, Bianca Terisa, in Mathematical Statistics
MAZEKE, Onke, in Environmental Water Management
MBANE, Nomabhelu, in Human Kinetics & Ergonomics
MBUNGE, Mihlali, in Biochemistry
MDLULI, Nomonde Chevious, in Microbiology
MELA, Thuthula, in Microbiology
MFAMELA, Nololo Nokwandisa, in Chemistry
MGUDLWA, Sivenathi, in Applied Mathematics/Computer Science
MHIZHA, Kudakwaishe Phillip, in Information Systems
MILNE, Shannon Dianne, in Information Systems
MJOLI, Siphamandla, in Computer Science
MMATLI, Masego, in Microbiology
MNCINCI, Zuko, in Biotechnology
MOKONE, Lesedi Mahlatse, in Chemistry
MOSTERT, Philip Stanley, in Mathematical Statistics, **with distinction**
MTINTSILANA, Zintle, in Environmental Water Management
MUNTHALI, Margaret Sekanawo, in Environmental Science
MUTOWO, Mwazvita Maurice Junior, in Information Systems
NELL, Rhys, in Botany
NGWARAI, Joshua Tendekai, in Information Systems
NKULA, Sesethu Milisa, in Information Systems
O'BEIRNE, David, in Geography
PALISO, Andisiwe, in Biotechnology
PAMLA, Avela, in Environmental Science
PARK, Yuchan, in Biotechnology
POOLE, Louise Carmen, in Computer Science/Mathematics, **with distinction**
READ, Kimberley Diana, in Information Systems
REEVE, Kathryn, in Economics, **with distinction**
SAWULI, Khwezi, in Microbiology
SEBOKO, Tshepiso Collen, in Environmental Science
SEKALELI, Bafokeng Thabelo, in Chemistry
SETSOME, Obakeng, in Chemistry
SIANYUKA, Nicolette, in Microbiology

SIMANGO, Martin Shuko, in Computer Science
SINGIZI, Ethel Tatenda, in Geology
SOLANI, Dumisani Jonah, in Information Systems
SONGCATA, Ntobeko, in Biotechnology
ST QUINTIN, Georgia-Ann Masego, in Environmental Science, **with distinction**
STANDER, Jesse-Clint, in Chemistry
STIRK, Emma Jane, in Entomology
STONE, Jamie-Lee, in Biochemistry, **with distinction**
STRELITZ, Benjamin Steenveld, in Applied Mathematics/Mathematical Statistics, **with distinction**
STUART, Robert Alan, in Geology
TRAFFORD, Bronwyn Kate, in Environmental Science
TRIVELLA, Cara-Marie, in Zoology, **with distinction**
TSAOANE, Moipone Elizabeth, in Computer Science/Human Kinetics & Ergonomics
VAN DER MERWE, Elizabeth Anne, in Entomology/Zoology, **with distinction**
VELE, Rendani, in Mathematical Statistics
WATKINS, Ariana Heloise Jo, in Microbiology, **with distinction**
WEISS, Sven-Erick, in Ichthyology & Fisheries Science
WELMAN, Brian Allister, in Computer Science/Mathematics, **with distinction**
WILBY, Ella Caitlin, in Computer Science, **with distinction**
WOOTTON, Oscar, in Environmental Science
WORTLEY, Ross Michael, in Ichthyology & Fisheries Science, **with distinction**
ZABO, Sophakama, in Biochemistry, **with distinction**
ZENANI, Kamva Trevor Songo, in Environmental Science
ZONDANI, Thataswa Currinta, in Environmental Water Management

DEGREE OF DOCTOR OF PHILOSOPHY

ACHEAMPONG, Mavis Agyeiwaa, MPhil (Ghana), in Entomology, in the Department of Zoology and Entomology. Degree by thesis. Thesis:

Suitability of entomopathogenic fungal isolates for microbial control of citrus pests: biological traits. Supervisor: Distinguished Professor MP Hill. Co-supervisors: Dr S Moore (CRI) and Dr C Combes.

ADENIYI, Omotayo Kayode, MSc (Nigeria), in Chemistry, in the Department of Chemistry. Degree by thesis. Thesis: Design of immunobiosensors for detection of tumour-associated anti-p53 autoantibodies: the method development. Supervisor: Dr PN Mashazi.

ADESINA, Abiola Olanike, MSc (Nigeria), in Chemistry, in the Department of Chemistry. Degree by thesis. Thesis: Design of immunosensors for the detection of C-reactive protein using oriented antibody immobilization. Supervisor: Dr PN Mashazi.

ANGWENYI, Daniel, MSc (Wits), in Environmental Science, in the Department of Environmental Science. Degree by thesis. Thesis: Biodiversity conservation and rural livelihoods across four nature reserves in the Eastern Cape Province, South Africa: striving towards a balance between livelihoods and conservation. Supervisor: Professor J Gambiza. Co-supervisor: Professor MJ Potgieter (University of Limpopo).

BONNASSIEUX, Etienne Henri Joseph, MSc (France), in Physics, in the Department of Physics and Electronics. Degree by thesis. Thesis: Statistical analysis of the Radio-Interferometric Measurement Equation, a derived adaptive weighting scheme and applications to LOFAR-VLBI observation of the Extended Groth Strip. Supervisor: Professor OM Smirnov. Co-supervisor: Professor P Zarka (Lesia/CNAP).

BRYAN, Kate Louise Halse, MSc (Rhodes), in Physics, in the Department of Physics and Electronics. Degree by thesis. Thesis: Analysing emergent time within an isolated Universe through the application of interactions in the conditional probability approach. Supervisor: Professor AJM Medved.

BUTLER, Edward Claude, BScHons (Rhodes), in Fisheries Science, in the Department of Ichthyology and Fisheries Science. Degree by thesis.

Thesis: Understanding a West African recreational fishery as a complex social-ecological system: A case study of the fishery for giant African threadfin *Polydactylus quadrifilis* (Cuvier, 1829) in the Kwanza Estuary, Angola. Supervisor: Professor WM Potts. Co-supervisor: Dr A-R Childs.

CHORUMA, Dennis Junior, MSc (Zimbabwe), in Water Resource Science, in the Institute for Water Research. Degree by thesis. Thesis: Exploring and modelling agricultural land management practices and climate change on agroecosystem services in the Eastern Cape, South Africa. Supervisor: Dr ON Odume. Co-supervisors: Dr S Pietsch (IIASA) and Dr J Balkovic (IIASA).

COMLEY, Jessica, MSc (Rhodes), in Zoology, in the Department of Zoology and Entomology. Degree by thesis. Thesis: Carnivore intra-guild competition in Selati Game Reserve, Limpopo Province, South Africa. Supervisor: Professor DM Parker (UMP). Co-supervisor: Dr N Mqgatsa.

DALU, Mwazvita Tapiwa Beatrice, MSc (Rhodes), in Environmental Science, in the Department of Environmental Science. Degree by thesis. Thesis: Unpacking the link between adaptive capacity, assets and responses of rural livelihoods facing multiple stressors in the Eastern Cape. Supervisor: Professor J Gambiza.

DAWAM, Robert Rangmou, MSc (Jos), in Physics, in the Department of Physics and Electronics. Degree by thesis. Thesis: Thermoluminescence and phototransferred thermoluminescence of synthetic quartz. Supervisor: Professor ML Chithambo.

EDEGBENE, Ovie Augustine, MSc (Delta State), in Water Resource Science, in the Institute for Water Research. Degree by thesis. Thesis: Developing macroinvertebrate trait- and taxonomically-based approaches for biomonitoring wadeable riverine systems in the Niger Delta, Nigeria. Supervisor: Dr ON Odume. Co-supervisor: Professor FO Arimoro.

EGWUONWU, Afamefuna Victor, MSc (Lagos) in Human Kinetics & Ergonomics, in the Department of Human Kinetics and Ergonomics. Degree by thesis. Thesis: Musculoskeletal disorder incidence and the influence of stakeholder interactions on the persistence of symptoms and disability perception in the Nigerian context. Supervisor: Dr JP Davy. Co-supervisors: Professor M Göbel and Mr AI Todd.

FOLLEY, Damilola Esther Olatunji, MSc (Ibadan), in Physics, in the Department of Physics and Electronics. Degree by thesis. Thesis: Dynamics of stimulated luminescence in natural quartz: Thermoluminescence and phototransferred thermoluminescence. Supervisor: Professor ML Chithambo.

FRITH, Kelly-Anne, MSc (Rhodes), in Biotechnology, in the Biotechnology Innovation Centre. Degree by thesis. Thesis: Towards development of a malaria diagnostic: generation, screening and validation of novel aptamers recognising *Plasmodium falciparum* lactate dehydrogenase. Supervisor: Professor JL Limson. Co-supervisor: Dr R Fogel.

HAUPT, Philip Wouter, MSc (NMMU), in Ichthyology, in the Department of Ichthyology and Fisheries Science. Degree by thesis. Thesis: Reef fish association with benthic habitats at a remote protected coral reef ecosystem in the Western Indian Ocean – Aldabra Atoll, Seychelles. Supervisor: Dr A Bernard. Co-supervisor: Dr J Turner.

IHEANETU, Kelachukwu Joseph, BSc (Nigeria), MSc (Fort Hare), in Physics, in the Department of Physics and Electronics. Degree by thesis. Thesis: Modelling and investigating the primary beam effects of reflector antenna arrays. Supervisor: Professor OM Smirnov. Co-supervisors: Dr JN Girard and Dr K Thorat.

KAYEMBE, Jean-Pierre, BScHons (DRC), MSc (Pret), in Chemistry, in the Department of Chemistry. Degree by thesis. Thesis: Synthesis of peptidomimetic compounds as HIV-1 protease inhibitors. Supervisor: Professor R Klein. Co-supervisor: Professor PT Kaye.

KIMUDA, Magambo Phillip, MSc (Rhodes), in Bioinformatics, in the Department of Biochemistry and Microbiology. Degree by thesis. Thesis: Computer aided approaches against Human African Trypanosomiasis. Supervisor: Professor AO Tastan Bishop.

LAMING, Dustin, MSc (Rhodes), in Biochemistry, in the Department of Biochemistry and Microbiology. Degree by thesis. Thesis: Improved-throughput bioassays determining the efficacy rate of novel antimalarial and cytotoxic compounds using fluorescent vitality probes. Supervisor: Professor H Hoppe. Co-supervisor: Professor AL Edkins.

LEWIS, Olanrewaju Olurotimi, MSc (Newcastle), in Information Systems, in the Department of Information Systems. Degree by thesis. Thesis: The Integration of Personally-owned Information and Communication Technologies (PICTs) for Teaching and Learning in Resource-Constrained Higher Education Environments – The Case of a Nigerian University. Supervisor: Professor CJ Khene.

LIDZHEGU, Zwidofhelangani, BScHons (Venda), MSc (NWU), in Water Resource Science, in the Institute for Water Research. Degree by thesis. Thesis: A classification of large wetlands in Africa's elevated drylands based on their formation, structure, and hydrological functioning using Earth Observation (EO) data and a Geographic Information System (GIS). Supervisor: Professor WN Ellery. Co-supervisor: Dr SK Mantel.

MAKUNGU, Eunice Jesto, MSc (Dar es Salaam), in Hydrology, in the Institute for Water Research. Degree by thesis. Thesis: A combined modelling approach for simulating channel-wetland exchanges in large African river basins. Supervisor: Professor DA Hughes. Co-supervisor: Dr SK Mantel.

MALEMA, Mokaba Shirley, BSc (Limpopo), BScHons (Wits), MSc (Limpopo), in Biotechnology, in the Biotechnology Innovation Centre. Degree by thesis. Thesis: Assessment of the microbial quality of various domestic rainwater harvesting systems and the suitability of a nano-based treatment method. Supervisor: Professor R Tandlich. Co-

supervisors: Dr E Momba-Jaswa, Dr B Zuma and Dr J Mwenge Kahinda.

MANGADZE, Tinotenda, BScHons, MSc (Zimbabwe), in Zoology, in the Department of Zoology and Entomology. Degree by thesis. Thesis: Ecological assessment of a temperate river system using complementary biomonitoring techniques: a case study of the Bloukrans river system, South Africa. Supervisor: Professor PW Froneman. Co-supervisor: Dr T Dalu.

MANYERUKE, Meloddy Hlatini, MSc (Rhodes), in Chemistry, in the Department of Chemistry. Degree by thesis. Thesis: The synthesis and evaluation of the medicinal potential of novel 4 – hydroxycoumarin derivatives. Supervisor: Professor RWM Krause. Co-supervisor: Professor PT Kaye.

MARTINS, Angelina Rosa Deo, MSc (Oklahoma), in Environmental Science, in the Department of Environmental Science. Degree by thesis. Thesis: The current role of palm species *Hyphaene coriacea* and *Phoenix reclinata* in local livelihoods in the Zitundo area, southern Mozambique. Supervisor: Professor CM Shackleton.

MASEKO, Zolile, BScHons (Zimbabwe), MSc (Rhodes), in Entomology, in the Department of Zoology and Entomology. Degree by thesis. Thesis: The distribution and impacts of *Eccritotarsus catarinensis* and *Eccritotarsus eichhorniae* on water hyacinth in South Africa. Supervisor: Distinguished Professor MP Hill. Co-supervisor: Professor JA Coetzee.

MBABA, Mziyanda, MSc (Rhodes), in Chemistry, in the Department of Chemistry. Degree by thesis. Thesis: Repurposing a polymer precursor scaffold for medicinal application: synthesis, characterization and biological evaluation of ferrocenyl 1,3-benzoxazine derivatives as potential antiprotozoal and anticancer agents. Supervisor: Professor SD Khanye. Co-supervisor: Professor AL Edkins.

MBOU SOB, Ulrich Armel, BSc (Cameroon), MSc (Rhodes), in Physics, in the Department of Physics and Electronics. Degree by thesis. Thesis: Addressing flux suppression, radio frequency interference, and selection of optimal solution intervals during radio interferometric calibration. Supervisor: Professor OM Smirnov. Co-supervisor: Dr L Bester.

MCEVOY, Orla, MSc (Dublin), in Zoology, in the Department of Zoology and Entomology. Degree by thesis. Thesis: The management of lions (*Panthera leo*) in small fenced wildlife reserves. Supervisor: Professor DM Parker (UMP). Co-supervisor: Dr S Ferreira.

MHLANGA, Xolane Reginald, BScHons (Rhodes), in Geology, in the Department of Geology. Degree by thesis. Thesis: A reappraisal of the origin of the Hotazel Fe-Mn Formation in an evolving early Earth system through the application of mineral-specific geochemistry, speciation techniques and stable isotope systematics. Supervisor: Professor H Tsikos. Co-supervisor: Professor TW Lyons.

NDHLOVU, Aldwin, MSc (Rhodes), in Marine Biology, in the Department of Zoology and Entomology. Degree by thesis. Thesis: Interactions of endolithic cyanobacteria and mussels. Supervisor: Distinguished Professor CD McQuaid. Co-supervisor: Dr GI Zardi.

OGUNTADE, Bukunola Kehinde, MSc (Nigeria), in Chemistry, in the Department of Chemistry. Degree by thesis. Thesis: Synthesis, characterization and adsorption properties of new Cu/Zn bimetallic organic frameworks using pyrometallic acid. Supervisor: Professor GM Watkins.

OSWALD, Krista Natasha, MSc (NMMU), in Zoology, in the Department of Zoology and Entomology. Degree by thesis. Thesis: An integrative approach to understanding vulnerability of an alpine range-restricted bird to climate warming. Supervisor: Dr B Smit. Co-supervisors: Dr S Cunningham, Dr SE Edwards and Dr A Lee.

PENNEFATHER, Sean Neil, MSc (Rhodes), in Computer Science, in the Department of Computer Science. Degree by thesis. Thesis: NFPComms: A synchronous communication framework for the CPU-NFP heterogeneous system. Supervisor: Professor KL Bradshaw. Co-supervisor: Professor BVW Irwin.

SARRON, Arthur, MSc (France), in Chemistry, in the Department of Chemistry. Degree by thesis. Thesis: Activity of diverse chalcones against several targets: Statistical analysis of a high-throughput virtual screen of a custom chalcone library. Supervisor: Professor KA Lobb. Co-supervisor: Mrs JD Sewry.

SEKGOTA, Khethobole Cassius, MSc (Rhodes), in Chemistry, in the Department of Chemistry. Degree by thesis. Thesis: Synthesis of novel heterocyclic systems as potential inhibitors of HIV-1 enzymes. Supervisor: Professor SD Khanye. Co-supervisor: Professor PT Kaye.

SHEIK AMAMUDDY, Olivier Serge Andre, MSc (Rhodes), in Bioinformatics, in the Department of Biochemistry and Microbiology. Degree by thesis. Thesis: Application of machine learning, molecular modelling and structural data mining against antiretroviral drug resistance in HIV-1. Supervisor: Professor AO Tastan Bishop. Co-supervisor: Professor NT Bishop.

SIMUJA, Clement, PGDHE (Rhodes), MSc (Malawi) in Information Systems, in the Department of Information Systems. Degree by thesis. Thesis: Transformative ICT education practices in rural secondary schools for developmental needs and realities: the Eastern Cape Province, South Africa. Supervisor: Professor K Krauss. Co-supervisor: Professor CJ Khene.

TAYLOR, Richard Peter, MSc (Rhodes), in Fisheries Science, in the Department of Ichthyology and Fisheries Science. Degree by thesis. Thesis: Resource recovery options in brewery effluent treatment using high rate algal ponds and activated sludge: assessing environmental impacts. Supervisor: Professor CLW Jones. Co-supervisors: Mr RK Laubscher and Professor AK Cowan.

UPFOLD, Nicole Sarah, BScHons (Rhodes), in Microbiology, in the Department of Biochemistry and Microbiology. Degree by thesis. Thesis: Exploring the structural integrity of the picornavirus capsid: prospects for vaccine and antiviral drug design. Supervisor: Professor C Knox.

VAALTYN, Michaelone Chantelle, MS, in Biochemistry, in the Department of Biochemistry and Microbiology. Degree by thesis. Thesis: Hop/STIP1 as an anti-cancer drug target. Supervisor: Professor AL Edkins.

VAN DER WALT, Kerry-Ann, MSc (Rhodes), in Ichthyology, in the Department of Ichthyology and Fisheries Science. Degree by thesis. Thesis: Thermal tolerance and the potential effects of climate change on coastal intertidal and estuarine organisms in the Kariega Estuary and adjacent coastline, Eastern Cape, South Africa. Supervisor: Dr NC James. Co-supervisors: Dr F Porri and Professor WM Potts.

What is graduation?

Graduation is a time of enormous celebration for students and their families. It is a time to revel in a sense of achievement, to take photographs and store memories, to applaud and, of course, to dress up with the dignity that the ceremony deserves.

Graduating students traditionally wear an academic gown that marks them as ‘special’ and different to others attending the ceremonies. They walk across the stage, kneel before the Chancellor, who then taps them on the head with a ceremonial hat, before proceeding to the Registrar who ‘hoods’ them according to the degree they have earned.

For many attending the graduation ceremonies, a key question is what all this ceremony and procedure, much of which originated in Europe hundreds of years ago, actually mean in contemporary South Africa. One way to answer this question is to focus on the graduates themselves. As students walk across the stage today, they are not the same people they were who enrolled in the University three, four or more years ago. If the University has done its job well, they are completely different people.

The graduate looks at the world with an entirely different set of eyes. They now look for evidence for what is stated and to contest anything that does not appear to them to be valid or fair on the basis of the evidence presented.

At a university like Rhodes, graduates have also been trained to look through the lenses of theory. Theory is exactly like the lenses in a pair of spectacles. It allows us to see things we would not see without the spectacles, or to see things differently. Because theory allows us to see things we would not normally see, it allows us to imagine a world which does not yet exist, a world transformed from the one we currently inhabit. These are valuable attributes in the workplace and this is why graduates are highly sought after. They are especially important, however, in a fledgling democracy like ours.

As graduates walk across the stage today and participate in rituals which do not have their roots in African soil, one way to understand the proceedings is to see them as signifying an identity shift. Much as the way young men in some cultures, for example, may wear new clothes after an initiation ceremony, the wearing of an academic gown symbolises a shift in who the graduates have become. This shift is recognised by the Chancellor who taps them on the head and by the Registrar who places the hood over their shoulders. The Deans, academics, together with the entire University community, look on - celebrating and acknowledging our students’ achievements.

Enjoy the ceremony today, but, more importantly, remember its significance in the lives of our young graduates and, indeed, in the history of our country.

Amended: A contribution by Dr Chrissie Boughey – Deputy Vice Chancellor Academic and Student Affairs - Rhodes University.

Yintoni uthweso-zidanga?

Uthweso-zidanga lixesha lobhiyozo elikhulu kubafundi neentsapho zabo. Lixesha lokugcoloda nokuchulumancela impumelelo, ukuthatha imifanekiso nokugcina iinkumbulo, ukuqhwabela izandla, yaye ngokuqinisekileyo, lixesha lokunxiba ngesizotha esifanele lo mnyhadala.

Kulisiko ukuba abafundi abathweswa izidanga banxibe izidanga zabo ezibaphawula ‘njengabakhethekileyo’ nabohlukileyo kwabanye abantu abazimase umnyhadala. Bahamba eqongeni, baguqe phambi kweNgqonyela, iye ibathwese indwe, phambi kokuba badlulele kuMabhalane-jikelele weYunivesithi oye ‘abafake umxwayo’, ohambelana nesidanga abasithwesiweyo.

Kuninzi lwabo bazimase iminyhadala yothweso-zidanga, umbuzo ophambili ngowokuba lo mnyhadala, inkoliso yawo esusela eYurophu kumakhulu ngamakhulu eminyaka eyadlulayo, ingaba uthetha ntoni kuMzantsi Afrika wale mihla. Enye indlela yokuphendula lo mbuzo kukugxila kwabathweswa izidanga. Njengoko abafundi behamba kwiqonga namhlanje, abasengabo aba bantu babengabo mhla babebhalisela ukufunda kule Yunivesithi kwiminyaka emithathu, emine okanye engaphezulu eyadlulayo. Ukuba iYunivesithi iwenze ngokuphume izandla umsebenzi wayo, bangabantu abohlukileyo kwaphela.

Lowo uthweswa isidanga ulibona ihlabathi ngamehlo ohlukileyo. Ngoku ukhangela ubungqina boko kuthethwayo aze aphikise nayiphi na into ebonakala ingenasihlahla kuye okanye enetyheneba ngokuphathelele kubungqina obunikezelweyo.

Kwiyunivesithi efana neRhodes, abo bathweswa izidanga bakwaqeqeshwe ukuba bajonge izinto ngamehlo enkcazo-bungcali(theory). Inkcazo-bungcali ifana nqwa neelensi kwiintanyongo. Isinceda ukuba sibone izinto ebesingenakho ukukwazi ukuzibona ngaphandle kweentanyongo, okanye sibone izinto ngendlela eyahlukileyo. Kuba inkcazo-bungcali isincedisa ukuba sibone izinto ebesingenakho ukukwazi ukuzibona, isinceda ukuba sibe nomfanekiso-ngqondweni wehlabathi elingekabikho, ihlabathi eliguquke kakhulu kwelo siphila kulo ngoku. Ezi zizidingo ezixabisekileyo kwindawo yokuxelengela yaye kungoko abo bathweswa izidanga belangazelelwa. Babaluleke ngokukhethekileyo, ingakumbi kulawulo lwentando yesininzi efana neyethu esakhulayo.

Njengoko abo bathweswa izidanga behamba kwiqonga namhlanje yaye bethatha inxaxheba kwizithethe ezingenangambu ezikumhlaba waseAfrika, enye yeendlela zokubona ukuqhutywa kwalo mnyhadala kukubonisa inguqu ngokobuni. Oku kuyafana nokuba kwezinye iinkcubeko, umzekelo, amatyendyana anganxiba iimpahla ezintsha emva kolwaluko. Ukunxitywa kwesidanga kuphawula inguqu ekubeni lowo uthweswa isidanga uye abe ngubani na. Le nguqu iye iqinisekiswe yiNgqonyela eye ibabethe entloko noMabhala-jikelele weYunivesithi oye abaxakathise. Iintloko zamasebe, iimfundimanekunye nalo lonke uluntu lweYunivesithi, bayabukela – bebhiyozela bekwaqaphela impumelelo yabafundi bethu.

Yonwabela umnyhadala namhlanje, kodwa ngokubaluleke ngakumbi, khumbula ukubaluleka kwawo kumlisela nomthinjana wethu othweswa izidanga, yaye nangokwenene, ukubaluleka kwawo kwimbali yelizwe lethu.

Ilungiselelwe nguNjingalwazi uChrissie Boughey – Owayesakuba nguSekela Ngqonyela weMicimbi yezeMfundo neyaBafundi – eRhodes University.

Wat is 'n gradeplegtigheid?

'n Gradeplegtigheid is 'n tyd van feesvieringe vir studente en hulle families. Dit is 'n tyd waarin prestasie gevier, foto's geneem en herinneringe gemaak word. Dis 'n tyd vir applous en natuurlik om aan te trek na gelang van die waardigheid wat die seremonie verdien.

Studente wat gradueer dra tradisioneel 'n akademiese toga wat hulle uitwys as 'spesiaal' en anders as ander mense wat die seremonie bywoon. Hulle loop oor die verhoog, kniel voor die Kanselier, wat hulle dan met 'n seremoniële hoed op die kop tik voor hulle aanbeweeg na die Registrateur wat vir hulle 'n 'kap opsit' volgens die graad wat hulle verwerf het.

Vir baie mense wat die gradeplegtigheid bywoon, is daar 'n sleutelvraag rondom wat al hierdie seremonie en prosedures, waarvan die oorsprong honderde jare gelede meerendeels in Europa ontstaan het, in kontemporêre Suid-Afrika sou beteken. Een manier om die vraag te beantwoord is om te fokus op die gegradueerde self. Soos studente vandag oor die verhoog stap, is hulle nie dieselfde mense wat drie of vier jaar gelede by die Universiteit ingeskryf het nie. As die Universiteit hulle werk goed gedoen het, is hulle geheel en al ander mense.

Die gegradueerde kyk met 'n nuwe paar oë na die wêreld. Hulle soek nou vir bewyse vir dit wat gestel word en bestry enige iets wat nie vir hulle geldig of regverdigbaar is volgens die bewyse wat aangebied word nie.

By 'n universiteit soos Rhodes, is gegradueerdes ook opgelei om deur die lens van teorie te kyk. Teorie werk presies soos die lense van 'n bril. Dit skep die geleentheid om dinge te sien wat ons nie sonder die bril sou kon sien nie; of om dinge anders te sien. Aangesien teorie ons die kans gun om dinge te sien wat ons andersins nie sou kon sien nie, gee dit ons ook die geleentheid om 'n wêreld te verbeel wat nog nie bestaan nie, 'n wêreld wat getransformeer het van die een waarin ons op die oomblik woon. Dit is waardevolle eienskappe in die werkplek en dit is waarom gegradueerdes gesog is. Hulle is veral belangrik in 'n jong demokrasie soos ons eie.

Soos wat gegradueerdes vandag oor die verhoog stap en deelneem aan rituele wat nie hulle wortels in Afrika-grond het nie, is een manier om hierdie verrigtinge te begryp om dit te sien as 'n verskuiwing in identiteit. Op dieselfde manier waarop jong mans in sommige kulture nuwe klere ná 'n inisiasie-seremonie sou dra, simboliseer die dra van 'n toga 'n verskuiwing in die persoon wat die gegradueerde nou geword het. Hierdie verskuiwing word erken deur die Kanselier wat hulle op die kop tik en die Registrateur wat die kap oor hulle skouers plaas. Die Dekane en akademici, saam met die hele Universiteitsgemeenskap, aanskou dit – ter viering en erkenning van ons studente se prestasies.

Geniet vandag se seremonie, maar – belangriker nog – erken die uitsonderlike belang daarvan in die lewens van ons jong gegradueerdes en, inderdaad, in die geskiedenis van ons land.

Gewysig: 'n Bydra deur Emeritus Professor Chrissie Boughey – Voormalige Adjunk Visiekanselier van Akademie- en Studentesake – Rhodes Universiteit.