

CHEMISTRY DEPARTMENT 2017

NEWSLETTER- 2ND SEMESTER

Mission Statement

The Department of Chemistry is committed to:-

- promoting excellence in teaching, scholarship and research;
- developing the academic, technical and leadership potential of our students and staff; and
- responding to the educational, social, environmental and technological challenges of our society.

Message

To All Staff and Students:

I want to take this opportunity to thank everyone for all their efforts throughout the year. The success of our department is built on the efforts of every one of you and in this past year, we have enjoyed many successes. Thank you for the dedication and commitment that each of you has shown.

We've come through a year that was filled with both challenges and victories. How reassuring it's been to know that we can count on all of you regardless of what faces us. On behalf of the department, please allow me to extend my personal and genuine appreciation to each and every one of you for your valuable contributions.

We offer our best wishes to you as we all look forward to a successful end of year!

Sincerely,
The Chemistry Department.

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RHODES UNIVERSITY
Where leaders learn

Chemistry Department Annual Photograph



Back Row: Mr R Douglas, Mr A Magadla, Mr O Joseph, Mr S Mgidlana, Mr M Ngoepe, Mr B Jones, Dr P Ngoy, Mr K Oluwafemi, Mr O Achadu, Mr A Sarron, Mr N Nwahara, Mr R Mageza, Mr A Ngcayi, Mr L Mpetla, Mr A May, Mr L Lekokotla, Mr C Nkanga.

4th Row: Ms A Adesina, Mr S Sicwetsha, Mr V Chitsa, Mr O Adeniyi, Ms S Peteni, Mr C Kruger, Ms Z Neduvhuledza, Ms N Dubazana, Mr A Lebechi, Ms C Waleguele, Ms L Kisula, Mr L Sigauke, Mr M Mafani, Ms B Ah Yui, Ms A Sindelo.

3rd Row: Mr S Sukula, Ms T Potts, Mr T Nkaki, Mr N Okafor, Mr H Keulder, Mr U Ndagano, Dr S Nwobi, Mr L Joji, Ms T Cossa, Ms S Centane, Mr K Mafokwana, Ms L Nqeno, Ms A Ngqinambi, Mrs B Chithambo, Ms G Kubheka, Ms N Molupe, Dr B Babu, Dr G Fomo, Mr N Nwaji.

2nd Row: Mr G Motlou, Mr F Bokosi, Mr O Oderinlo, Mr S Hulushe, Dr F Eze, Dr F Khan, Mr M Louzada, Ms L Nene, Ms R Nkhahle, Mr S Shabangu, Mr T Mtshare, Ms S Marwarwa, Mr D Dondashe, Mr B Motloun, Mr M Ngwenya, Ms B Ndebele, Ms E Dube, Ms A Adewumi, Mr N Ojo.

Front Row: Ms B Tarr, Mrs J Sewry, Dr J Britton, Ms G Cobus, Dr P Kempgens, Dr K Lobb, Prof P Kaye, Prof R Krause, Prof T Nyokong, Dr S Khene, Prof G Watkins, Dr J Mack, Dr R Klein, Mr F Chindeka, Dr V Smith, Dr S Khanye, Ms A Williams

Congratulations Dr Mashazi

Dr Mashazi has been awarded MRCs Self-initiated Research Grant for 2017/18. Congratulations!!! Let excellence in research continue!

Africa Day

HAPPY AFRICA DAY!!!!!!

Referring to this year's celebrations, the African Union Commission says Africa's young people are an enormous resource for the continent's development. It is in this regard that African Union Heads of State and Government declared the theme for 2017 as 'Harnessing the Demographic Dividend through Investments in Youth'.

I feel this theme is very fitting for the times and tribulations we are going through at the present moment.

We as Africa's Youth have a fundamental role to play in making our nation great. May we forever strive to do so.



Breakfast at Spur ☺



50th Anniversary Celebrations in the Department

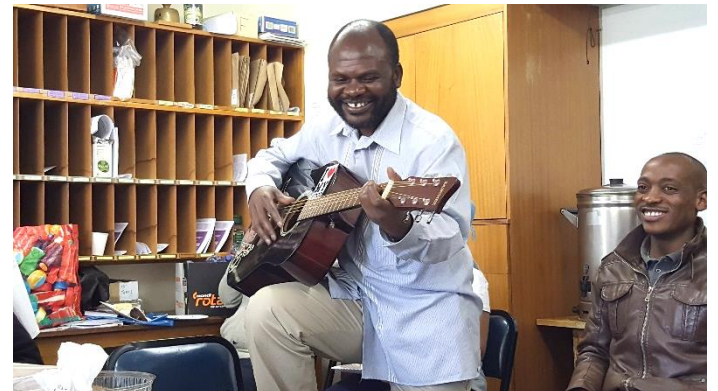
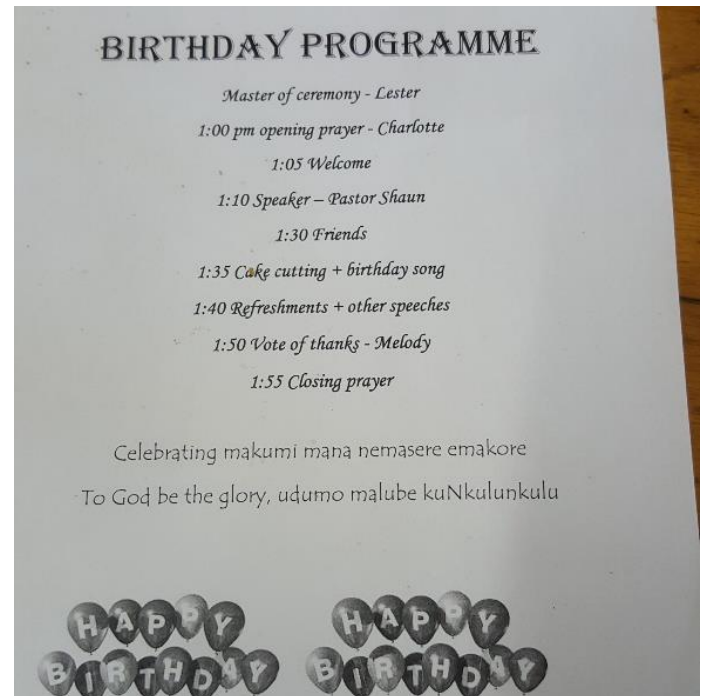
Congratulations to Prof Kaye and Joan celebrating their 50th wedding anniversary!

VC & Thomas Alty Awards 2017

Congratulations to all staff members who have recently successfully completed a qualification. We acknowledge that this takes dedication and sacrifice.



Mr Meloddy Manyeruke Birthday Celebrations in the Department



Taken from Grocotts Mail

Local businesses score in Service Learning Programme

LEADING THE VISION

Local economic development



By TSHIDI MOHAPELOA

The MBA class for 2017 from the Rhodes Business School, visited the Assumption Development Centre (ADC) as part of Rhodes University's Service Learning Programme (SLP). The MBA's SLP is a process with 3 phases of engagement, between the MBA students and ADC-affiliated businesses:

The orientation phase enables MBA students and the business owners to get to know each other, enabling students to gain an understanding of businesses, the context that they are working within, and for the businesses to share their business journey and vision.

The next phase is structured to determine opportunities for business growth, share the challenges that each business has, and identify how the business can be supported. This is done in conjunction with the ADC business owners and is in the form of a diagnostic assessment of business needs, so as to develop a training and development support programme for each business.

The last phase is for the MBA students to design a programme that will benefit the ADC business owners to refine the way they conduct business. The report generated is used by the ADC to create a development plan for the individual businesses, the following year.

During the MBA teaching block in May, four businesses from Joza were visited. Each business was allocated a group of MBA students, where a one-on-one interaction occurred. This included site visits, a show casing of the businesses, and allowing the businesses to embrace and celebrate significant successes. Service learning exposes MBA students to realities of small businesses in

Joza.

This collaboration is mutually beneficial, where students are exposed to realities faced by businesses within the township economy, and the businesses benefits through creating solutions and opportunities beyond survival. Because the SLP is directly aimed to benefit ADC-affiliated businesses, MBA students get an opportunity to be exposed to local issues and create local solutions. The opportunity to experience the complexities faced by township entrepreneurs and start-ups help challenge the MBA class to move from classroom setting to practical solutions. Both the ADC businesses and the students are encouraged to work hand-in-hand, whilst embracing and celebrating significant successes for each milestone, and acknowledge resource limitation and creativity when operating a business.

Through this, the MBA students – as thought-leaders – get opportunities beyond classroom learning to experience and internalise robust and non-conventional approaches that aim to address not only business or economic issues, but also environmental perspectives and social injustice issues, that directly impact on humans. The benefits for the four businesses are diverse and individualised based on the different needs.

The four MBA groups visited the following businesses:

The first business was an entrepreneur with interests in sewing. It was discovered that his entrepreneurial savvy moves beyond one trade and thus there is a need for him to be nurtured to formalise the registration of the business.

The second business visited was a township laundromat that is looks at marketing and expansion opportunities. Stu-



Dambisa Zenani, owner of Sis'D Laundry in Extension 7, has great plans for her business. Photo: Martin Scholtz

dents were highly impressed with the growth of the entrepreneur and the business over the last few months since their visit in May. Progress made includes securing a business loan from the municipality, and exploring opportunities to use sustainable methods for managing water (e.g. harvesting rainwater). These creative initiatives will help improve business sustainability.

The third business visited requires assistance in the registration as an NGO that caters for the addiction prevention needs of the community. As a socially focused business, students are challenged to explore their conventional thinking of business with social impact. Opportunities for registration, alignment, and compliance with the correct structures are some of the areas of intervention for this business.

The final business visited was a co-operative that high-

lighted business skills as a gap to manage some of the daily operations. These included operational capacity, funding, governance and administrative issues. Learnings for students included appreciating opportunities that the informal economy has, when creativity, passion, and people-oriented commitment are present.

• Tshidi Mohapelea is Senior Lecturer/ PDEM Co-ordinator at Rhodes Business School. The Rhodes Business School values this partnership with the ADC, enabling it to expose its MBA students to realities of developing a small business in a township environment.

Leading the Vision is a series by significant Grahamstown players meaningfully contributing to key areas of growth and transformation in education, economic development, arts and culture and local governance.

Alumni News

Big Opportunity For UWC Nanochemist: Dr Sarah D'Souza to attend Nobel Laureate Meeting in Lindau

Author: Institutional Advancement- Nicklaus Kruger

Skill and hard work have driven Dr Sarah D'Souza, postdoctoral researcher in the University of the Western Cape's Department of Chemistry, to succeed - but it's also her passion for the science of nanomaterials that will take her to the 67th Nobel Meeting in Lindau, Germany, from 25 to 30 June 2017...where she will have the chance to share ideas and inspiration with over 400 of the world's brightest young researchers, and dozens of Nobel Prize-winning scientists.



"I love how versatile nanomaterials are," Sarah says. "They've changed the way we make advances across all fields of research, opening up new possibilities and providing alternative solutions to problems. They're fascinating."

The Lindau Nobel Lindau Meetings have taken place every year since 1951, and are designed as a forum for exchange, networking and inspiration. Participants are chosen worldwide by a high-level scientific review panel from thousands of PhD candidates and post-docs in all three natural science Nobel Prize disciplines: medicine and physiology, physics, and chemistry.

The selected young scientists will experience a six-day programme with numerous lectures and panel discussions, and will also get the opportunity to discuss their own work at one of the master classes or poster sessions.

This year's meeting (#LiNo17) is dedicated to the field of Chemistry. Bernard Feringa and Jean-Pierre Sauvage, who received the Nobel Prize in Chemistry 2016 (together with Sir Fraser Stoddart) for the design of molecular machines, will discuss their work, and other key topics will include big data, climate change and the role of science in a "post-truth" era.

"This is a unique opportunity for the young scientists to present their research in front of an international audience and receive invaluable feedback from Nobel Laureates," says Wolfgang Lubitz, Vice-President of the Council for the Lindau Nobel Laureate Meetings and scientific co-chairperson of this year's meeting.

Sarah's Road To Lindau

Born and raised in the small town of Mutare, Zimbabwe, on the border with Mozambique (where her sister and parents still live), Sarah was fortunate to experience both private, co-ed (Hillcrest Junior) and public uni-sex (Mutare Girls High) schooling, which helped her develop a broader perspective on education - and life in general.

"Coming from a small town made moving to Grahamstown to study at Rhodes University easier," Sarah says, "and living in res gave me the opportunity to make lifelong friends, and to help newly-arriving students adjust to their new life and get involved in community engagement projects."

Her work at Rhodes involved quantum dots - semi-conducting nanoparticles which produce a range of amazing colours when they fluoresce, and have potential application for transistors, solar cells, LEDs, quantum computing, medical imaging and more.

"Their range in applications got me hooked onto materials science," Sarah notes, "and I never looked back."

Sarah came to Cape Town, and UWC specifically, to do her post-doctoral fellowship because of the excellence of the nanomaterials programme at the University - and to work with Dr Edith Antunes in the Department of Chemistry, who had been her co-supervisor at Rhodes. Now she's co-supervised by Dr Antunes and Prof Denzil Beukes at the University's School of Pharmacy.

"I got lucky and am currently working with both Dr Antunes and Prof Beukes. My heartfelt thanks for the guidance and moral support they've provided, which kept me going through my studies and now with my post-doctoral fellowship."

The appreciation is mutual.

"Sarah has been a wonderful addition to the lab, and a great help to the students - and to us as supervisors," Dr Antunes notes. "She shows initiative, she's very skilled, and she's one of the most determined individuals I know -

if she hits a wall in her research, she keeps thinking and trying until she succeeds. I have no doubt she will make excellent contacts when she meets other young researchers and leaders in the field - and I hope she comes back with many ideas for research."

Sarah is also grateful to her former supervisor, Prof Nyokong - who helped her hone her skills as a developing researcher - to her former colleagues at Rhodes - who provided support and camaraderie - and to her funders, the National Research Foundation, for her postdoctoral fellowship, and also the African Academy of Sciences and the Lindau Foundation, for sponsoring her participation in the upcoming Meeting.

And to her family. "To my family - my deepest thanks. Without their love and support, I wouldn't be where I am today."

Chemical connections: Learning, sharing, growing

In addition to the scientific programme, the meeting offers many opportunities for the young scientists to socialise with the Nobel Laureates, and of course with each other, in a relaxed atmosphere.

"I'm really excited to meet my fellow chemists and find out what research is being carried out by some of the most innovative thinkers from around the world - and I'll have the opportunity to share ideas, meet potential collaborators, and make new friends."

There's more to life than lab work, of course - and Sarah is making the most of it.

"There's no limit to what you can do in Cape Town," she enthuses. "Hanging out with friends in all sorts of environments - gardening, nature walks, or even just exercising or reading or relaxing with some movies and series - there's always something to do."

But her love for nanomaterials is as strong as ever - and unlikely to fade anytime soon.

"I am really motivated to be at the top of my field," she says. "I hope I'll always have the chance to grow my skills, take on interesting projects, and collaborate with people I can really learn from."

"And who knows? Maybe in ten years I'll be on my way to winning the Nobel Prize - and one day I'll come back to the Lindau Meeting to share my discoveries with the next generation."

Nolwazi Nombona (2003) to attend Lindau Nobel Laureate Meeting

Source: *Alumni Relations*

UKZN lecturer in the School of Chemistry and Physics, Dr Nolwazi Nombona, will attend the 67th Lindau Nobel Laureate Meeting in Germany in June.

Nombona, selected for the trip by the African Academy of Science (AAS), joins fellow UKZN representative Dr Mark Williams-Wynn, who is being sent by the Academy of Science of South Africa (ASSAf).

The annual Lindau meeting - this year dedicated to the field of chemistry - is a forum where about 30 Nobel Laureates meet the next generation of leading scientists, comprising close to 500 undergraduates, PhD candidates and post-doctoral researchers from all over the world. The meetings foster interaction among scientists of different generations, cultures, and disciplines.



More than 200 renowned science and research institutions worldwide identify the participants.

Nombona, who received her PhD from Rhodes University in Grahamstown, has been at UKZN since 2014 and is involved in research concerning the integration of inorganic molecules with nanomaterials for the development of electrochemical sensors which detect pathogens and carcinogens in the environment.

Nombona's interest in the field was sparked by the realisation that scientists can use relatively cheap materials for the development of sensors that could radically improve people's lives. She hopes to contribute to the generation of new knowledge that will support the fabrication of efficient on-site sensor devices.

Excited ahead of the once-in-a-lifetime opportunity of travelling to Lindau to meet the Laureates, Nombona thanked AAS for the opportunity. She is eagerly anticipating potential collaborations that could arise after meeting with other young scientists as well as being exposed to networks unlike any she has encountered at other conferences she has attended.

**Congratulations to Dr Prudence Ogunlade Executive Manager (TRANSNET)-
AWARDED OLD RHODIAN AWARD FOR 2017.**



The award “The University honours Old Rhodians who through their individual actions and achievements have enhanced the reputation of the University. The Award is specifically intended to acknowledge Old Rhodians as role models and in essence is the greater family of Rhodes rewarding one of their own”

Congratulations Prudence

Bruker Compact Liquid Chromatography Mass Spectrometry (LC-MS/MS)

By Dr Xavier Siwe Noundou

In June 2017, Rhodes University purchased a last generation of Quadrupole Time-of-Flight (Q-TOF) Mass Spectrometry system (Bruker Compact) through an NRF Grant Infrastructure Funding Instruments (NEP), secured by Prof Rui Krause. This tandem (MS-MS) mass spectrometer can be used for structural and sequencing studies as well as qualitative and quantitative applications. The LC-MS/MS spectrometer is coupled to a UHPLC system (PDA detector) but also can operate via direct injection using a syringe pump to measure accurate molecular weight up to 3000 m/z. The system comes with electrospray ionisation (ESI), atmospheric pressure chemical ionization (APCI), atmospheric pressure photoionization detectors as well as a cryospray for temperature-sensitive samples. Some applications of this instrument include: determination of the purity of samples, sample confirmation, chemical modification, analysis of proteins, peptides, oligonucleotides, drug discovery, combinatorial chemistry, drug testing, water quality, food contamination, enzyme reaction, protein digestion, amino acids sequencing etc. One of the particularities of this instrument is that the first analyser is used to select a molecular ion (precursor or parent ion). This chosen precursor then pass through the collision cell and is bombarded by gas molecules which fragment the precursor to form daughter ions (fragment ions) which are separated in the second analyser according to their mass to charge ratios. All the daughter ions are formed directly from the chosen precursor, and hence produce a fingerprint profile specific to the sample under investigation. These experiments provide important structural information for small organic molecules.

I would say that at Rhodes University, we are privileged enough to have this State-of-the-Art LC-MS/MS system and this would certainly improve learning at Rhodes University and speed up number of research projects, therefore increase the outputs for researchers working with the techniques associated to the instrument.



Teachers Workshop

The Teachers Workshop was run during the last week of vac. The departmental laboratory technical staff members, Ms Makabe and Ms Gojela, ran the workshops.



Trading Live

GRAHAMSTOWN IS AMAZING – 143 SUCCESSFUL EVENTS IN 6 DAYS!

Rhodes University Trading Live

We have indeed honoured the legacy of uTata Nelson Rolihlahla Mandela

A record number 336 groups participated in Trading Live 2017. The Community Engagement Division extends sincere appreciation to Academic and Support Departments, Students and Senior Leadership, Community Partners, Schools, Businesses, Residences and all other groups who participated so enthusiastically in Trading Live for Mandela this year. Thank you, Enkosi, Baie Dankie

Of the above, we had two groups involved from the department and we are so proud of all involved.

“A Pollutant’s Tale” demonstration with Deputy Dean of Science, Ms [Joyce Sewry](#) at Ntsika High School

Soap making workshop, presented by Dr. [Rosa Klein](#) at the Assumption Development Centre

Transformation Summit

The Rhodes University Transformation Summit convened on the 28th to 30th July. The conversation held by Professor Thebe Medupe and Dr Samson Khene named The Decolonization of the Science Curriculum took place on the 19th of July in Eden Grove Blue.

Dr Khene is a Senior Lecturer in the Department of Chemistry and his research interests are in phthalocyanine chemistry, spectroscopy, nonlinear optics and electrochemistry. He currently holds a Bachelor of Science degree, Bachelor of Science (Hons), Master of Science and a PhD in Physical Chemistry degree. He holds two teaching qualifications in Higher Education, which include a Postgraduate Diploma in Higher Education (PGDHE) and the Strengthening Doctoral Supervision Course (NUFFIC). Dr Khene is a JSPS (Japan Society for Promotion of Science) HOPE fellow and Africa Science Leadership Program (ASLP) fellow. Dr Khene also has an interest in supporting the development of upcoming African researchers, and invests much of his time organizing Rhodes University Science Dialogues for the promotion of science in society.



RHODES UNIVERSITY
TRANSFORMATION SUMMIT
28-30 JULY 2017

The Decolonization of the Science Curriculum

19 July 2017 • 18:30 pm • Eden Grove Blue



Professor Thebe Medupe

Professor Thebe Medupe is one of the foremost astronomers in South Africa and Africa. In 2002 he obtained his PhD in astrophysics from the University of Cape Town (UCT) – becoming one of South Africa's first black astronomers. His interest in astronomy was initially sparked by the passing of Halley's Comet, a large "dirty snowball" passing the earth on its orbit around the sun. After lecturing at UCT for five years, Medupe decided to return to Mafikeng to try to get more African students involved in astronomy through the National Astrophysics and Space Science Programme (NASSP). In 2002 Medupe was the presenter of the film *Cosmic Africa*, made by Craig and Damon Foster (makers of the award winning film *The Great Dance*). The film follows Medupe as he travels to different communities in Africa listening to their stories about the stars and sharing his scientific knowledge of the stars with them. Professor Medupe is currently a lecturer at North-West University and the head of the Timbuktu Science Project. The project's aim is to search for scientific knowledge in ancient manuscripts discovered in the ancient Malian city of Timbuktu.



Dr Samson Khene

Dr Khene is a Senior Lecturer in the Department of Chemistry at Rhodes University. He has a background in Physical Chemistry and his research interests are in phthalocyanine chemistry, spectroscopy, nonlinear optics and electrochemistry. He currently holds a Bachelor of Science degree, Bachelor of Science (Hons), Master of Science and a PhD in Physical Chemistry degree. He also holds two teaching qualifications in Higher Education, which include a Postgraduate Diploma in Higher Education (PGDHE) and the Strengthening Doctoral Supervision Course (NUFFIC). Dr Khene is a JSPS (Japan Society for Promotion of Science) HOPE fellow and Africa Science Leadership Program (ASLP) fellow. Dr Khene also has an interest in supporting the development of upcoming African researchers, and invests much of his time organizing Rhodes University Science Dialogues for the promotion of science in society.

2017 Barker Lectures and Seminar

The 2017 Barker Lecture was given by Professor Susan Bourne. Professor Bourne is the Head of Department of Chemistry at the University of Cape Town. She ran 3 seminars entitled:

1. "Guest Exchange and Guest influence in Dynamic Frameworks" Monday, 24 July 2017

In this presentation, examples from recent work her laboratory was presented, including the influence of halogen versus hydrogen bonding on a molecular host-guest system. The ability to exchange guest molecules selectively will be described.

2. "Chromophoric Framework Solids for Sensing and Storage" Wednesday, 26 July

Examples from recent work her laboratory was presented, including MOFs and 3D hydrogen bonded frameworks constructed from the same flexible ditopic ligands, 4-(4-pyridyl)benzoate and 3-(4-pyridyl)benzoate. Their chromic behaviour on application of external stimuli such as heat, grinding or exposure to solvent vapours will be described.

3. “SUPRAMOLECULAR GELS” Thursday, 27 July 2017

In her work, she has studied a series of iron(III) complexes of organic carboxylate ‘gelators’, and found that the formation of 3D-networks of very short range order result in spherical solid components rather than the fibres usually reported. In this talk, Professor Bourne presented the results of a systematic study of the physical factors affecting gelation (e.g. counter ion, temperature, solvent) as well as preliminary results of applications such as sorption and separation.

The Chemistry society invited Professor Bourne to hold a Lecture on:

“Supramolecular chemistry: useful properties through weak interactions” Tuesday, 25 July 2017.

In this lecture, she described work done her laboratory over the past decade or so, all of which relates to answering some of those “big” questions....To look at these interesting (and only sometimes useful) properties, we wander across the periodic table, at whim. Sometimes an organic compound is suitable for our purpose and sometimes we need something that contains a metal ion instead. But underpinning it all is an understanding of fundamental physical chemistry – how much energy, of what kind, how fast, how far will this reaction go? Examples included molecular sponges comprised of metal-organic frameworks which can ‘breathe’ as they release and resorb guest molecules, coordination frameworks which change colour on exposure to specific chemical species, and others which can exchange guest species in predictable ways.

Dear Rosa and colleagues

Just a quick final thank you for your hospitality this week. I had a wonderful time meeting old friends and making new ones, and really enjoyed the opportunity to share lots of the research that excites me. Your students are wonderful – interested and engaged, and articulate about their own work and what they enjoy. Perhaps it’s the benefit of being in small classes and encouraged to present regularly; definitely something we could learn from you.

And Benita, I’ve seldom had such a smoothly organised visit, so thank you!

All the best
Susan

Industry Day

The Chemistry Departments Industry Day was one to remember with companies such as Woodoc, Merck, Tag Solvents, and Lasec. People such as Dr Emslie and Sue Robertson (Deputy Director of RU HR).

Quite a bit of information was given and all of the advice was worth listening to. After the formal sessions, we then proceeded to have informal chats and a light braai/dinner. Students were able to have one-on-one interactions with our guests which everyone said was very fruitful.

The Industry Day will be divided in two groups

Group 1 Chair Dr Klein

Career Development

- If you studied how does your degree help in the business
- What initiatives do you use to attract customers
- Did your background in science help you to gain the trust of customers
- What skills do you need to build a successful business
- How important is a good team in the business
- What career paths do you see in your line of business for graduates

Launching your career do's and don't

- How you started your business or your career
- Have you encountered any obstacles
- How important is collaboration and networking
- Mistakes and mishaps in the interview

The aim of the day is to guide our third years in how industry works and/or how a business works. We believe that some of our students do not know what opportunities their degrees hold as well as what other work they can do, whether it be by placing orders or working in admin etc. so broadening them to think wider is good.

SciPharm Open Day

On Saturday the 5th of August, the Faculty of Science and Pharmacy hosted its joint annual Open Day. The event was attended by 300 Grade 9 learners from our local schools who attended over 20 activities offered by RU, Albany Museum, SAIAB and the Amakhala Foundation. It was wonderful to see staff and 36 undergraduate students running the activities and assisting as chaperones.

RU also hosted the annual Eskom Expo. A total of 177 learners submitted their projects for the competition that were judged by 97 volunteer's judges and 3 moderators from the faculties of Science and Pharmacy. In total, six gold, ten silver, thirty four bronze, and twenty nine merit awards were awarded.

A huge thank-you is extended to Kim and Joyce for the Open Day arrangements, and to Kevin Lobb and the Scifest team for the Expo arrangements.



RU Open Day

The university also hosted schools from the broader Eastern Cape on the 8th of September for a general Open Day.

The departments ran experiments showing global warming effects on the ocean pH; catalytic methanol reaction; and how to make ice cream using liquid nitrogen.



ChemSoc End of Year Dinner

The Chemistry Society held their annual End of Year dinner on Friday the 13th of October. The evening included awards given to students and staff alike.

Some of the awards were:

The man with the Best Chance of forgetting his wedding ring at his wedding--- **James van Niekerk**

Has recurrently enchanted the chemistry department with his dance moves--- **Nwaji Njemuwa (aka chemical Michael Jackson)**

For persevering in his inability to stick to his allocated time slots--- **Dr V Smith**

Has maintained his position as the best guest student of the year--- **Cuan Kruger**

You and your partner are cordially invited to...

Chem Soc Year End Function

Please Join us for a Dinner and a Drink to celebrate the year we had together

FRIDAY
THE 13TH

Friday, October
13th



For his success in creating a near-death experience for his fellow lab members--- **Wandile Katu**

Has been our year round spiritual guide--- **Akhona Ngqinambi**





CAN YOU
GUESS WHO
THEY ARE...?



SACI Regional Seminars

The ANNUAL EASTERN PROVINCE SACI POST-GRADUATE CHEMISTRY SEMINAR took place at Rhodes University on Friday October 20th 2017. The four Universities in the region were represented well by their speakers, presenting on a range of research from natural product derived plasticizers to theoretical studies. It was exciting to see such a high calibre of young scientists enjoying the opportunity provided by SACI. The afternoon of talks was followed by the awarding of the SACI Post graduate award to Christian Nkanga (Rhodes University) and the James Moir medals for the region. The participants and supporters then enjoyed a short cocktail party which provided opportunity for networking and catching up amongst academics and students before the prizegiving and the long drive to the respective cities for Walter Sisulu University (both Mthatha and East London campuses were represented), University of Fort Hare and Nelson Mandela University.

JUNIOR SECTION (BSc Hons, B Tech, 1st year MSc) – Chairperson: Dr P Tseki

Akhona Nqinambi (RU):	Synthesis and characterization of fluorescence silica nanoparticles for biosensing applications
Lize de Jager (NMMU):	N,N'-Bis(9-phenyl-9-thioxanthenyl)ethylenediamine: Highly Selective Host Behaviour in the Presence of Xylene and Ethylbenzene Guest Mixtures
Jairos Mhlanga (WSU):	Synthesis and characterisation of phenylene linked porphyrin dimers for use in antimicrobial photodynamic therapy
Funeka Matebese (UFH):	Synthesis, characterization optical and structural studies of Cus nanocrystals for the application in QDSSC's
Cuan Kruger (Rhodes):	Exploring cocrystals
Yamkela Nzuzo (WSU):	Aspects of Vibrational Overtone Spectra for Thiophenol and Derivatives in Hydrogen Bonding

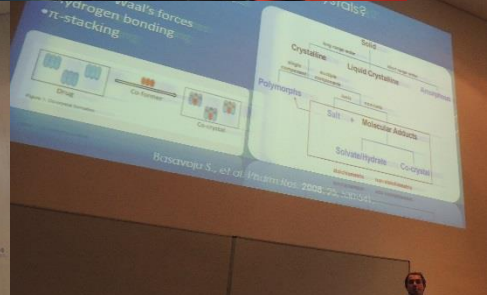
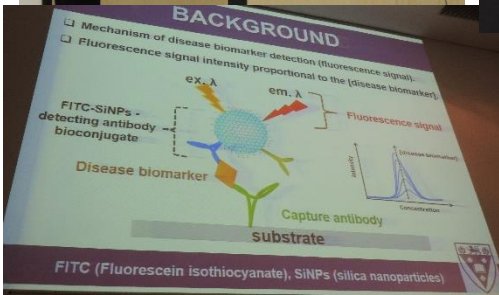
SENIOR SECTION (2nd year MSc, PhD) – Chairperson: Prof G Watkins

Thabo Hasheni (WSU):	Synthesis and Characterization of Triazole-linked Aminocones and 6,8-dibromoquinoline-3-Carbaldehyde hybrids via Huisgen 1,3-dipolar cycloaddition.
Tobeka Naki (UFH):	Synthesis, characterization and cytotoxicity evaluation of nanocarriers for combination therapy
Kirstin Burger (NMMU):	Synthesis and Characterization of Novel Plasticizer Compounds Derived from Eucalyptus Oil.
Sivuyisiwe Mapukata (RU):	Laser induced photodegradation of Orange G using phthalocyanine-cobalt ferrite conjugates in nanofibers

The prize winners for each section were as follows:

Junior section	First Prize:	Cuan Kruger (Rhodes University)
	Second prize:	Ms Lizé de Jager (NMMU)
Senior section	First Prize:	Sivuyisiwe Mapukata (Rhodes University)
	Second prize:	Ms Kirstin Burger (NMMU)

Walter Sisulu University will host the seminars in 2018, the University of Fort Hare will host in 2019 and Nelson Mandela Metropolitan University will host in 2020.



RU students to compete for \$1 million



Chemistry Masters student Zweli Hlatshwayo is Rhodes Campus Director of the 2017/18 Hult Prize for social entrepreneurs. Photo: Sue MacLennan

RU students to compete for \$1 million

BY SUE MACLENNAN ON

OCTOBER 17, 2017 *ECONOMIX, ENTREPRENEURSHIP Grocotts Mail*

Chemistry Masters student Zweli Hlatshwayo reckons students are among the most creative thinkers around and he's thrilled to be the 2017/18 Director of the Rhodes University leg of the Hult Prize.

Saturday is D-Day for Rhodes students vying for recognition in the world's largest student testing ground for budding social entrepreneurs. The annual competition for the Hult Prize has been named by TIME Magazine as one of the top five ideas changing the world. Run in partnership with the United Nations, it runs for a year at a time, aiming to identify and launch the most compelling social business ideas – start-up enterprises that tackle serious issues faced by billions of people.

From more than 50 000 applications received in a year, one winning team will receive US\$1 million in seed capital, as well as mentorship and advice from the international business community.

Ideas are sourced from MBA and university students after challenging them to solve a

pressing social issue on topics such as food security, water access, energy, and education. The Hult family – founders of Education First donates US\$1 million in seed capital to help the winning team launch a social enterprise. The prize is a partnership between Hult International Business School and the Clinton Global Initiative (CGI).

"Students need to come up with ideas that not only address a social challenge, but also make money in the process to sustain lives – that's part of the definition of social entrepreneurship," Hlatshwayo says.

"The year before last, a group had the idea of using insects as food – something a lot of us wouldn't have thought possible. It started slow and now it has a cash flow of R40m a year. They were able to achieve that with the support of the US\$1m that they won.

"It's these kinds of seemingly simple ideas, that could be available to someone sitting at home not doing anything. They can use those simple ideas to make money. So here at Rhodes,

students have the opportunity to come up with ideas to solve a number of problems for the community of Grahamstown.”

Education is the first problem to solve in Grahamstown, Hlatshwayo says.

“Although some schools are doing very well, several aren’t in terms of producing students who don’t get through to University.

“Poverty and unemployment are other problems in Grahamstown. Students could come up with ideas that unemployed people could use to sustain themselves, financially and otherwise.”

Students are very creative, Hlatshwayo reckons. “Until you give them the space to think, you may never realise how creative they are.”

He says he’s confident that Rhodes students are capable of winning the prize.

“I’ve spoken to a number of entrepreneurs here at Rhodes,” Hlatshwayo says. “The ideas are there. I’ve met a lot of bright minds at Rhodes from different fields – commerce, humanities, journalism – they’re just amazing students.

“I believe success is when a great opportunity meets great potential and at Rhodes University we have a lot of bright minds that have what it takes to change the world.”

As Hult Prize Campus Director at Rhodes University, Hlatshwayo’s job is to organise and implement a quarterfinal round of the competition on campus. The competition will include at least 10 student teams. The winning team goes through to one of 15 regional finals happening around the world next March. One winning team from each host city will then move on to a summer business incubator, where participants will receive mentorship, advisory and strategic planning as they create prototypes and set-up to launch their new social business. A final round of competition will be hosted in September 2018, when the winning team for \$1m is announced.

Hult Prize at Rhodes University is recruiting volunteers and teams interested in registering for the competition. Students can use Powerpoint – or any other form of presentation – to convince the judges that their idea should go through to the next phase.

‘My mom, my inspiration’

Hlatshwayo was born and raised in Mbabane, Swaziland, and his love of entrepreneurship is inspired by his mother, Daisy Ntshangase.

“She always says, ‘As long as you’re alive, you cannot say you are poor.’ If you have 24 hours and the person who the means to pay for something also has 24 hours, that means there’s something you can do.”

Ntshangase used to sell snacks to high school and primary school pupils.

“I was in Grade 1 when she opened a small shop. From that small shop, she started growing and now she owns three or four shops. That is remarkable,” he says. “I admire that.

“She always says, she doesn’t see how she would survive if she were working for someone else. That’s where I get my love for entrepreneurship – the drive of an entrepreneur is remarkable.”

Death of a Staff Member

It is with great sadness that the University must announce the passing of Mr Heinrich Keulder as a result of a motor accident on Sunday 13th August.

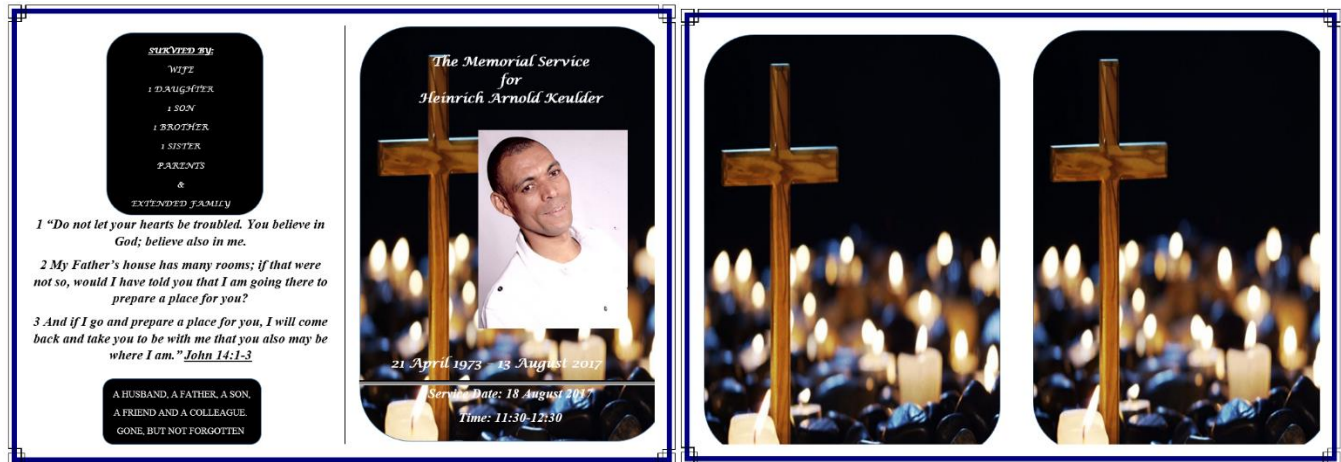
Heinrich joined Rhodes in January 2000 as a technical officer in the Electronics unit, before being appointed IT Specialist Technician in January 2008.

In January 2013 he moved to the Chemistry Department as Senior Technical Officer.

Heinrich's cheerful spirit and his eagerness to assist will be sorely missed by his friends, his colleagues and the students within the department. Our condolences are extended to his wife, Penny and his children Jaden and Sian, as well as to his parents.

Rosa Klein

(Acting Head of Department)



Heinrich will be sorely missed by us all.