

7he Lab Rat

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MAJOR FUNDING BOOST FOR DRUG DISCOVERY RESEARCH

shaba Khanye, together with his collaborators across different departments at Rhodes serve as chemical starting University, was amongst the five research groups to share R7.5 million of Sandisa Imbewu Fund. The fund is an initiative by Rhodes University to support strategic new academic research. The funding will enable Dr Khanye (and his collaborators) to create a hit-to-lead platform with an ultimate goal to build capacity in translational drug discovery of anti-infective

The research group of Dr Set- chemistry and drug discovery great need for more resources approaches, is on generation of 📙 to enable us to operate. We novel chemotypes that will 🔡 are very thrilled to be amongst



as potentially new antiinfective agents. "This funding agents. The emphasis of this came at the right time as my program, in which projects will 5 research group is growing and be guided by modern medicinal 🔡 gaining momentum, there is a

those chosen to receive the points for further development 📙 Sandisa Imbewu funding. The funds will assist in laying the foundation to search and secure more resources to support our research endeavors", said Dr Khanye. Currently, the group consists of three Honours and four Masters students conducting research projects in medicinal chemistry. In 2015, there will be an additional four students (Masters and doctoral) to conduct research in infectious diseases.

THIRD YEAR PLANT VISIT TO FRESENIUS KABI



PROF BEVERLY D GLASS - GREEN CHEMISTRY LECTURE 2014

Professor Beverley Glass, currently the Chair of Pharmacy in the College of Medicine and Dentistry at James Cook University in Townsville, Australia and an old Rhodian recently visited Rhodes University and delivered a research lecture in the Department of Chemistry, entitled Sunscreens: Photostability, Formulation and Skin Penetration. This lecture in applied photo- and pharmaceutical chemistry highlighted the need for photostability testing and the use of broad spectrum sunscreens to protect

against the harmful effects of UV-radiation. Exposure to UV-radiation results in an increased incidence of melanoma, with the occurrence in the Western Cape recently reported to be as high as that in Australia. In relation to formulation and skin penetration, the controversy associated with the safety of the inclusion of nanoparticles of titanium dioxide in sunscreens and their potential penetration into the deeper layers of the skin was discussed. Recent reports have indicated that the inclusion of nano-titanium dioxide in sunscreens to achieve broad spectrum protection is safe as penetration is limited to the upper layers on the skin.

Professor Glass has had a long and very happy relationship with the Department of Chemistry at Rhodes University, having completed her PhD in Carbohydrate Chemistry in the laboratory G5 on the ground floor of the Chemical and Pharmaceutical Sciences Building and is a frequent visitor to the department. It was however a great opportunity to catch up and share stories and a few laughs with colleagues from her time at Rhodes including Professor Tebello Nyokong who kindly facilitated the lecture and Mrs Joyce Sewry and meet new members of the department, including Professor Rui Krause, Head of Chemistry and Dr David Khanye at a dinner organised by the department.



SERVICE LEARNING IN CHEMISTRY

Second year Organic Chemistry practicals are often seen as a recipe to be followed, and then to get out of the lab as soon as possible. However, when the second years have to make dyes and teach others about the practical, it takes on a whole new meaning for them.

Service-learning can take many forms, and in the case of second year Organic Chemistry, the servicelearning takes place over two practical afternoons. In the first afternoon the pairs of students all make different coloured dyes and see how these relate to the ultra -violet spectra of the differchemical structures. ent Then for the second practical, grade 10 and 11 learners from local schools are invited to join the second years. "Because the students know they have to teach the learners, they engage with this

practical so much more. They ask many questions and try to understand every step, and thus they learn so much more" said Prof Rui Krause, the practical coordinator.

In turn, the learners, some of whom are from disadvantaged schools, and have never even measured with a measuring cylinder, get the opportunity to do practical chemistry. They wear lab coats and safety goggles to protect themselves, and each learner is assigned to a pair of students. In the recent exercise, grade 11 learners from the Khula Learners programme and Graeme College made orange, red and purple dyes and tie-dyed t-shirts for themselves. The learners and students were required to reflect on the experience.

Responses from the learners included the following:

"What I mostly enjoyed about this afternoon was that of working in a laboratory with other people who are very interested in chemistry as I am. We don't get to work with chemicals all the time or practical work, so this was an experience that was very exciting"

"What I liked the most was the two students "J" and "K" because they helped me a lot. I also experienced a lot through them. I also liked what we were doing, I think I will do chemistry when I am in university. It was a great pleasure to come here, I experienced a lot of things. I am looking forward to come here again."

"What I liked about this afternoon was that I got to interact with students and sort of realise or get a perspective of how being a science or chemistry student rather feels like. And I learnt that being a science learner you have to give yourself to your work and try with all you can in you in order to achieve. And you have to be patient too."



CENTRE FOR NANOTECHNOLOGY INNOVATION NEWS: MERIT AWARDS FOR YOUNG SCIENTISTS TO ATTEND CONFERENCE IN MÜNSTER GERMANY ON NEW EQUIPMENT

NIC Manager, Dr Jonathan Britton and Senior Lecturer, Dr Philani Mashazi recently received awards to attend the 9th European Workshop on Secondary Ion Mass Spectrometry (SIMS Europe 2014) held at University of Münster, Germany from 7 - 9th September 2014. A user meeting for the new TOF-SIMS 5 (equipment recently purchased and to be commissioned towards the end of November) was also held in Germany at ION TOF (the supplier of the TOF-SIMS 5). Dr Britton and Dr Mashazi appreciated the opportunity to have been amongst the seasoned users of the TOF SIMS. They both acknowledge the financial support from NRF – through the Equipment-related Travel and Training grant (UID 92576) for Dr Mashazi and Claude Leon Merit Award for both Dr Mashazi and Dr Britton. The trip was a success as they got to network and meet the supplier (ION-TOF) of the TOF SIMS 5 at

their factory in Münster. During the workshop, various lectures were presented from the seasoned researcher as well as application specialists and were ranging from the basics to the advanced applications of TOF SIMS. Also various lectures discussed the strategies for data acquisition and analysis which were very helpful. ION -TOF had also organized the daylong user event, where they were show casing their I new equipment and upgrades to the already existing systems. Attending this user event was crucial as it highlighted the new software upgrades that will be available to us. Also the several ION TOF employees discussed the recent or forth -coming improvements and new equipment for various analyses. Drs Mashazi and Britton managed to make strong network connections with various attendees from the National Physics Laboratory (potential supplier of our standard sample for

equipment calibration) and Tascon (a start-up company from the University of Münster providing services for clients around Europe), just to name but a few. The TOF SIMS 5 equipment has wide ranging applications in various industries, such as automotive industry, microelectronics. polymer, glass, coatings, life sciences, paper and pharmaceutical. The workshop was beneficial to both Dr Mashazi and Dr Britton who will be the operators of the equipment and they are very excited for the equipment to arrive so they can start experimenting.



TOF SIMS 5

(for commissioning at Rhodes University in November 2014)



Farewell Messages

Mrs Bryone Peters: Technical Staff

I say farewell with a happy sigh. I may see you in the future and then we can laugh again. I leave with all the joy the department has brought to me, and hope that all the wonderful people that I got to know and work with, find the same joy in their careers as I did here in the Chemistry Department at Rhodes University.





Ms Sindi Skepe: Assistant Secretary

It has been a great experience working in the Chemistry Department. Much love. Ciao

Mr Jethro Christian: Clerical Intern Thank you for the laughs and good memories. All of you are amazing. When life gives you lemons, squirt some-

one in the eye.

#Laugh

Cheers.



CENTRE FOR NANOTECHNOLOGY INNOVATION MASTERS STUDENTS VISIT TOHOKU UNIVERSITY IN JAPAN

Ms Siphesihle Nxele and Mr Zane Watkins, both 1st year Chemistry Masters (MSc) students under the supervision of Distinguished Professor Tebello Nyokong recently spent two months in Japan to do some research at the Tohoku University in Sendai. The host at Tohoku University, Professor Nagao Kobayashi has been in collaboration with Prof Nyokong for a couple of years now and has also visited Rhodes on a few occasions, which includes a recent visit this year.

The research collaboration is between Rhodes University, South Africa and Tohoku University, Japan and is funded by the Joint Research Grant under the NRF (National Research Foundation, South Africa) and JSPS (Japan).

Ms Nxele and Mr Watkins found the research visit beneficial and are very grateful for the opportunity and generous support from their funders, supervisor, host, colleagues and students in Japan.

Ms Nxele commented "when I finally arrived in Japan after

many hours of flying, I was really surprised by the Japanese culture. It took a few days to settle in after being welcomed by Prof Kobayashi and his students and a group of other internationals in the hostel we stayed in. The experience was quite amazing. I had prepared myself mentally for the '6 day work week' part of the journey. It was tough but I knew that this was a once in a lifetime opportunity and I was prepared to put in the work. As we all know when it comes to Chemistry, things may just not work as we hope they would but I learnt a lot by just observing my Japanese colleagues work habits and techniques when it came to conducting experiments. I do respect their work ethic and discipline. When it came to down time, in my mind, I was on holiday! I went sightseeing, enjoyed the Japanese food and more importantly, did some shopping just for control. I am truly grateful for this opportunity. learned so much, met a lot of people from all over the world) and had the time of my life."

Mr Watkins described his experience as "invaluable not just for research but in life experiences as well. I saw a lot of Japan, which really opened my eyes to what the rest of the world can be like, and I learnt to appreciate what we have here in South Africa. I also met many new people and made contacts in foreign countries both professional and social."



KHANYA MATHS AND SCIENCE CLUB

On Saturday 8 Nov, the Khanya Maths and Science Club ended its year, with the annual prize-giving. Learners from grades 8-11 were awarded science-related books and certificates in recognition of their attendance on Saturday mornings.

Dr David Khanye, a lecturer in the Department of Chemistry was the guest speaker, and he encouraged parents to take a keen interest in the education of their children. He paid tribute to his mother and grandmother who prioritized the education of their children so that he now has a PhD in Chemistry and his brother is an engineer.

The Khanya Maths and Science Club will start again on 21 February 2015 and is looking forward to renewed energy and new learners participating.



GRACE NGUBENI ATTENDS THE WORLD CONGRESS AND CENTENNIAL OF THE AMERICAN

On the 05th of November I travelled from OR Tambo, Johannesburg connecting in Doha, Qatar then arriving in Charles de Gaulle, Paris on the 06th November. The purpose of my trip was to form part of a support team for the 100th year centennial of an NGO called American Field Services (AFS). AFS is a non-profit organisation that was established in 1914 by two ambulance drivers during world war one (WW1). The purpose of establishing this organisation was to encourage peace after the ambulance drivers had witnessed the brutality of both World War One and World War Two. The organisation challenged high school students from countries formerly at war, to go to the United States to live with families, study in secondary schools and develop an understanding for each other. The idea behind it was that it could be one way to prevent future conflicts. Now almost 100 years later, the organisation has established itself across the world where mostly high school students are selected to have an inter-cultural experience in various countries.

As part of the support team, my journey to Paris thus involved assisting with the 100th year centennial workshops and symposiums that were planned. The support team that was made up of 67 volunteers from within France and other parts of the world played a significant role in ensuring that all the events ran smoothly. For me this was such a great opportunity not only to travel to a first world country for the first time but to also meet other volunteers from other countries who have been and are part of AFS.

The program was extensive

FIELD SERVICE IN PARIS

and involved events such as the World Congress, Youth Forum Symposium, Returnee Day, UNESCO Symposium, Gala dinner and last but not least, an AFS Paris Tour. During the Youth Forum Symposium, global intercultural education was the topic of interest. At this event, Oscar Arias, the expresident of Costa Rica from (2006-2010 and 1986-1990) and Nobel Peace Prize in 1987, gave a special address to those who were attending the symposium. Mr Chernor Bah (youth advocate for global education and youth representative on the High-Level Steering committee for the UN Secretary General's Global Education First Initiative) and Eric Falt (Assistant Director-General for External Relations and Public Information at UNESCO) were also among inspirational speakers invited to the symposium that I had the pleasure to meet.

Overall, my trip was an eye opener as I got to see a different part of the world and the way it operates. The language barrier was one of the obstacles I had to overcome and it was difficult. Some of the people I came across were reluctant to speak English and thus made it difficult for me to communicate. However, there were also a few people who were very helpful especially at the subway, who helped me navigate my way through the city. From this experience, I have developed an appreciation towards our own country (South Africa) and its unique and distinct culture. The Ubuntu and diversity we possess as a nation are the two main attributes I am learning not to take for granted. I also realised that we are a developing country and can definitely learn a lot from other countries in order to better our own country. One of the things I learned in Paris was that the French people have fought really hard with their government to maintain their local production of food within their country in order to employ local people to create job opportunities and minimise purchasing imported goods.

Lastly, I am truly grateful to God for giving me this opportunity to travel. It was an amazing experience which I will treasure for years to come. I would also like to thank all the generous people who contributed towards my trip, I am utterly grateful for their generosity and willingness to help me raise the funds I needed. I do not take for granted your act of generosity and I pray that God blesses. This trip marks the first of many for me and I would encourage everyone to travel outside of South Africa and experience something that cannot be gained by merely hearing about other countries through media.





CENTRE FOR NANOTECHNOLOGY INNOVATION MASTERS STUDENT VISITS MOSCOW, RUSSIA

Mr Colin Mkhize, a 2nd year Chemistry Masters student under the supervision of Distinguished Prof Tebello Nyokong recently visited the Frumkin Institute of Physical Chemistry and Electrochemistry, Russian Academy of Sciences in Moscow, Russia.

This forms part of a research collaboration between the South Africa's National Research Foundation (NRF) and the Russian Foundation for Basic Research. The principal researchers/investigators for above collaboration are Prof Tebello Nyokong from Rhodes University (South Africa) and Prof Aslan Yu. Tsivadze from the Frumkin Institute of Physical Chemistry and Electrochemistry, Russian Academy of Sciences (Russia).

Mr Mkhize said the following about his trip:

"From the 26th of October to the 16th of November, I was privileged to spend some time in Russia thanks to the above research collaboration. This was a trip which I will never forget!

I was initially guite scared to go to Russia due to the recent political and economic issues which have arisen due to the Ukrainian conflict. However, this did not deter me. I set out on this my first international trip with much excitement. On arriving in Moscow, I was welcomed by Dr Alexander Martynov. He immediately made me feel welcome and helped me to obtain the currency I would need to live in Moscow, Rubles. Lucky for me, the Ruble is weaker than the Rand! I was taken to my accommodation in a suburb of Konkovo using the underground metro train system. I was really impressed by its efficiency and ease of use. Definitely something everyone should try once in their life. On Tuesday the 28th, I was finally introduced to the lab at the institute. I was lucky enough to be the first person to work in the lab as it had recently been refurbished and had all new equipment. There were a few issues, but working in this lab was a chemist's dream come true. I was given the task of synthesizing two triple decker phthalocyanines (TDPc), using europium as the central metal. One TDPc was three octabutoxvPcs put together, and the other was an asymmetric Pc which had two diethylene glycol chains for attachment to quantum dots for the purpose of making novel optical limiting nanocomposites. At the end of my three weeks, we successfully synthesized the 1st compound, but ran out of time for the 2nd. This was alright, as we had proven that it can be made and it is undergoing further analysis in Moscow.

On a more social side, I was blessed to visit various sites of interest in Moscow including the Kremlin, St Basils Cathedral, the Red Square, the Cathedral of Christ the Saviour and other really cool places. The most beautiful was the Russian Museum of Fine Arts. I also got a chance to visit St Petersburg for a weekend. An absolutely amazing place, except for the horrendous weather!

I would like to thank Prof Nyokong for affording me this amazing opportunity to experience an international lab and to be immersed in a completely foreign culture and learn to truly appreciate the science we do here in South Africa. I learnt a lot of things; both chemical and personal. I would also like to thank my hosts, Dr Martynov, Prof Gorbunova,

Prof Tshivadze and the whole of Lab 213 at the Frumkin institute for the amazing memories. I hope to one day again visit this amazing country.

The average temperature was a chilly 4°C with the occasional light snowfall or drizzle. Definitely a new experience for a South African!



POST DOCS OF THE CHEMISTRY DEPARTMENT

I am Xavier Siwe Noundou and recently graduated with a PhD in Chemistry in the Department of Applied Chemistry at the University of Johannesburg under the supervision of Professor Rui Krause. Currently, I am a Post-Doctoral Fellow and Manager of Prof Krause's Lab. My main research focus includes: medicinal natural products (MNP), organic synthesis (OS), drug delivery systems (DDS), and stimuliresponsive systems (SRS). Most of the applications of my research work are related to the development and treatment of diseases, especially neglected diseases and Poverty Related Infectious Diseases (PRIDs) including cancer, tuberculosis, malaria, HIV-AIDS, diabetes and other microbial infections. The aim of these projects is to improve the activity of new bioactive or

existing compounds against diseases of our interest. My current project is dealing with the development of new treatment for cancer.

Cancer is one of the diseases where all the current treatments are not good due to side effects, the bioavailability, fast degradation and low aqueous solubility of many drugs. We can therefore use nanotechnology and DDS to bring a solution to these drawbacks. Over the past decades, a great interest has been shown on the use of nanoparticles (NP) like gold nanoparticle (AuNP) to treat cancer due to their properties to specifically target cancer cells. The destination of these NP in the body or tissue is however not known precisely yet. So there are concerns that AuNP could accumulate in the tissue and become very

difficult to be excreted. Due to their small size it is not always possible to determine the path followed by the NP even with a very powerful electron microscope. Therefore if we want to deliver a drug into a cancer cell, we need to find a method of tracing where the drug goes after being administered in the cell. The surface of AuNP is quite large and can be coated with a number of molecules and then be loaded in the matrices of polymers such as chitosan or cyclodextrin (Figure 1).

Such DDS can be traced in the cells and offer the possibility to reduce the side effects, improve the bioavailability and low aqueous solubility as well as decrease the fast degradation of many drugs.

I recently attended the 23rd Biennial European Association for Cancer Research Congress, 5th–8th July 2014, Munich, Germany, the biggest meeting on cancer in Europe where more than 2000 researchers gathered to share and discuss their lastest findings on the development of new treatments for cancer. During my stay in Germany, I was invited by our collaborator, Prof.Dr. Ihmels Heiko from Universität Siegen, to present a seminar to his research group and the Department of Chemistry.



Dr Xavier Siwe Noundou



Dr Yollande Fomogne

Dr Yollande Fomogne was born and raised in Yaoundé. Cameroon. She is married with two children. She completed her schooling at the General Leclerc High School in 1996. She then pursued her undergraduate studies and received her BSc in chemistry in 2002 at the University of Yaoundé. In 2003 she obtained an honours degree in chemistry and later an MSc (with distinction) in chemistry in 2004, from the same university. In 2005, she enrolled at the Organic Chemistry Department, University of Yaoundé I for a Ph.D in Medicinal Natural Products. She afterwards entered at the Department of Applied Chemistry, University of Johannesburg in 2010 for a Ph.D in Medicinal Natural Products and Nanomaterials.

Dr Fomogne's research involves the search of novel compounds from number of medicinally important African plants and the construction of nano-drug delivery system based biocompatible renewable polymers that will control and differentiate the release and the delivery of anti-TB drugs along with anti -retroviral (ARVs).

Dr Yollande Fomogne



Dr. Jaya Lakkakula

Ph.D in Chemistry (University of Johannesburg) Post Doctoral Research Associate April 2014 - present Rhodes University, Grahamstown, South Africa Dr. Jaya Lakkakula, (Ph.D. Chemistry), now is a Post Doctoral Fellow at Department of Chemistry, Rhodes University (South Africa) and is currently working under an IBSA (India, Brazil and South Africa) fellowship. She got her BSc in Botany, MSc in Cytogenetics and Plant Biotechnology (Gold medallist) from University of Mumbai, India. She worked as a Vineyard officer at India's topmost wine making company, SULA, and pursued her passion for research by extracting oil from waste grape seeds. Subsequently she enrolled at the Department of Applied Chemistry, University of Johannesburg for Ph.D. She was selected for a COMMONWEALTH bursary for her PhD studies. Currently, Dr. Lakkakulas' research area is mainly focused in designing various nano and microparticulate tailored drug delivery system for anticancer or antituberculosis applications. She has worked earlier in developing pH sensitive drug delivery system using polymeric nanoparticles for hormonal drugs. She is working on improving the targeting and

delivery of anticancer drugs with nanoparticles by lowering the toxicity and also in a process to develop a multifunctional liposomal nanoparticles platform for therapeutics of cancer.



Dr Jaya Lakkakula

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Dr Khan Faridoon

I am from Pakistan and have a PhD in organic/medicinal chemistry. I completed my PhD at Peshawar University, Pakistan. A part of my PhD work was carried out at School of Chemistry & Molecular Biosciences, University of Queensland, Australia, under the supervision of Prof. Ross McGeary. My PhD work involved design, synthesis and assaying of enzyme inhibitors.

After obtaining my PhD (2012), I worked as an assistant Professor at a Chemistry Department in Islamia College Peshawar (Chartered University) Pakistan under the fellowship of IPFP of Higher Education Commission of Pakistan for one year. Then I was successful in being awarded a Rhodes University Post-Doctoral Fellowship and joined the research group of Professor Emeritus Perry Kaye early in January of 2014.

My primary research interests are centered on design, synthesis and evaluation of small new bio-active molecules as therapeutic agents using computer aided modelling techniques.

My research at Rhodes addresses the design, synthesis and evaluation of novel, stable DXR inhibitors and prodrugs as potential lead compounds in the development of effective antimalariThe research involves

als.

the use of computer modelling methods to explore the *in silico* interaction of putative inhibitors with the *Plasmodium falciparum* DXR receptor. The modelling results are used to design and synthesise both conformationally constrained cyclic and acyclic compounds.

Exploring the development of potential prodrugs and hybrid (dual target) drugs. Screening the synthetic compounds for anti-plasmodial, haemolytic and erythrocyte shape-changing properties and exploring their enzyme inhibition potential.



Dr Khan Faridoon

Dr Swarup Majumder

Swarup Majumder was born in Dharmanagar, Tripura, India. He obtained his Master degree in Organic Chemistry from Tripura University. After completion of Masters, he worked as a teacher in Senior Secondary Schools and college in Tripura, India. After qualifying CSIR-NET (JRF), he started working with Dr. Pulak J. Bhuyan, Principal Scientist, for doctoral studies in Medicinal Chemistry Division at CSIR-North East Institute of Science & Technology, Assam, India and received his PhD degree in 2013. Recently; he has joined as a Post-Doctoral Fellow (2014) at Rhodes University, South Africa with Prof. Perry T. Kave. Director. Rhodes Chemico- and Biomedicinal Research. His research area is mainly focused on synthesis of biologically active heterocyclic and polycyclic systems, including chromone-, chromene-, and coumarin derivatives.

My research area is mainly focus on synthesis of biologi-

cally active heterocyclic and polycyclic systems, including chromone-, chromene-, and coumarin derivatives including a series of ritonavir analogues as potential HIV-1 protease inhibitors and also phosphorylated AZT derivatives, which are conjugated with coumarin system. Compounds are isolated and analysed with different technique to ensure the purity of samples for medicinal potential with outstanding analytical data as well as completing critical and outstanding synthesis. It is also undertaking relevant bioassay of synthetic compounds under expert guidance and participating in the planning and development of new research direction.



Dr Swarup Majumder

Dr Poulomi Majumder

Postdoctoral Research Fellow (October, 2014 to present), Rhodes University, Grahamstown, Eastern Cape, South Africa

Dr. Poulomi Majumdar obtained her M.Sc. degree from Ranvenshaw College, Utkal University, India, in 2006, and M.Phil. degree from School of Chemistry, Sambalpur University, India, with specialization in Organic Synthesis in 2007. As a Project Fellow, UGC Research Project, she received her Doctorate degree under the supervision of Dr. A.K. Behera from the same University in July, 2012, in the area of Synthesis. Organic She worked as Asst. Prof. in a degree Engineering College, India from August 2012 to

December 2012. Subsequently, she moved to the Molecular photophysics and photochemistry group of Prof. Jianzhang Zhao, Dalian University of Technology, China as Postdoctoral Fellow (February, 2014 to August, 2014). Her scientific research interest includes synthesis of heterocycles, fluorescent molecular probes and phosphorescent transition metal complexes including their study on photophysical properties with steady-state and timeresolved spectroscopy. Currently, she is working on fluorescent molecular probes based nanocarriers for efficient and targeted drug deliverv.

She received B.N.Mankad Award for Best Paper in Indian Chemical Society Convention, 2010. She has 14 publications including 2 reviews (Chemical Reviews and Journal of Material Chemistry C).



Dr Poulomi Majumder

CENTRE FOR NANOTECHNOLOGY INNOVATION NEWS: MINISTER PANDOR VISITS RHODES

Science and Technology Minister Naledi Pandor officially opened the Rhodes/ DST Centre for Nanotechnology Innovation on the 14th November 2014, placing the institution at the forefront of international nanotechnology research.

During her visit, Minister Pandor admired the latest "time-of-flight-secondary-ion -mass-spectrometer" (TOF-SIMS) which cost a staggering R17-million and will help the university focus on specialized cancer and microfibre research.

The equipment was bought and upgrades done thanks to a partnership between the Department of Science and Technology (DST), National Research Foundation (NRF) and Rhodes University.

Minister Pandor praised Prof Nyokong, Director of the Centre for her scientific publishing record, as well as her massive contribution to human capital development. "Having a record of training more than 70 postgraduate students is a fabulous achievement" she added. Prof Nyokong said she had stayed in the Eastern Cape because she supported the "underdog". Despite being a poor province, the area had become a hub for nanotechnology with Nelson Mandela Metroplitan University also boasting hi-tech equipment to research other areas of the science.

"One of the things I encourage is that students who use the facilities must be handson," she said.



FAREWELL DEAR CHEMISTRY

The chemistry department has had a new intern every year since 2010. Each intern adding to the value of the chemistry department. Some good at finance, others good with suppliers, then there was me, the first male intern to the department, good with web moderating and communication.

To say this year wasn't a challenge would be a lie. I came to the department in the hopes of improving on the skills I already have and adding skills I didn't know lay dormant within me.

Working for the chemistry department has been an experience I will not be able to forget, from knowing everyone by their surnames only to later learning their names and placing that with a face.

The different students in the different labs have been so welcoming to me during this year and even let me enjoy their company and fooling around in the lab (with acetone, oh the dangerous acetone).

I have met a lot of people and got to know them even better as the months passed, from Kaif Missions with Alicia Singh and Iviwe Nokalipha to invading the corridor to raid Colin Mkhize's draw of candy and last but not least, Kelvin Kelly, the butcher, the baker, the candle stick maker, you my dear friend are one in a million. I will miss you all, even random conversations with Zane Watkins about everything or about hindsight with Sihle Nxele and Masego Kotane (20/20 Vision).

The chemistry department has added value to my life in this short period of time, a day doesn't go by without my laugh ringing through the passages or just making someone smile. The atmosphere within this department I must admit has been the best ever. Where else can you joke with an academic staff member about starting their rap career (Dr Mash), or dance around when Dr Khene walks in to the office? Let us not forget the constant Hi Mrs Sewry, Bye Mrs Sewry I always scream from behind my desk. Where else would you be able to speak to a Distinguished Professor about anything under the sun. This department has a homely atmosphere that I wish I can recreate wherever I will be working next.

In my office I also have lovely people that I speak to everyday, they have accepted me with my crazy sayings and inside jokes. I will miss you all so much. Barbara a lady with very few words but a work ethic beyond compare. Sindi, a lady who I can bug every time I need a translation from Xhosa to English and my internship mentor. Mrs Benita Tarr, you have been the best mentor that an intern could ask for. constantly throwing me in the deep end of tasks only because you know I would make a success out of it. You have taught me a lot in this short period of time that I will be able to use both in my personal as well as my professional life, for that I am forever grateful. Prof Krause, our HOD, there is so much that I can thank you for but not the right words to show just how thankful I am for the opportunities you have given me.

To everyone that works in the chemistry department, when do the fire drills end? The on going "beep beep" in the passages have been quite the experience, anyone have a screwdriver? I will do the honours of ending that alarms life.

I started here knowing nobody and am leaving being friends with everyone.

The tea room will never be the same again, the conversations and joke making that we had will be memories well kept and I will cherish them forever.

This year has been exceptional where I am concerned, it is not every day that you get to leave home and come to work to a second family, one that loves and cares for one another, one that cheers for you when your reactions work, and is there for you when you need it most (when your reactions don't work). I am grateful for all of you.

To Ms Gail Cobus, I will miss our tea time breaks and the phone calls to talk about work related subjects.

The year has come to an end and so has my internship.

I will keep in touch...

- Pseudo Chemist







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We are on the web!

For more information visit:

www.ru.ac.za/chemistry/



2nd International Symposium on Natural Products



The 2nd International Symposium on Natural Products was held from 23rd to 25th September 2014 in Cape Town at Lagoon Beach Hotel. It was organised by the Royal Society of Chemistry (RSC) and the National Natural Science Foundation for China (NNSFC). More than a 100 delegates from Africa, the United Kingdom, North and South America and China attended this symposium.

Aim of meeting

The aim of the symposium was to increase awareness on the role of chemistry on

relevant challenges like health, food, water and environmental sustainability. particularly lt was held in Africa to showcase the excellent opportunities Africa presents in natural product chemistry because of

the vast plant biodiversity in The meeting also Africa. aimed at providing а platform for discussions and exchange of ideas on the various researches done on natural products. This would then encourage collaborations between scientists from the different countries.

Range of topics covered

There was quite a range of topics covered from chemical profiling of specific species of plants to pest management in farming and health through the use of pheromones in the "lure to kill" technique.

Presentations by researchers from Rhodes Chemistry Department

Members of our group presented posters on the 23rd of September. The titles of the presentations were as follows: Chithambo B., Siwe Noundou X. and Krause R. W. M. <u>Search for</u> <u>antimalarial compounds</u> from the bark of *Molin-*<u>da lucida</u>.

Fomogne-Fodjo M. C. Y, van Vuuren S., Ndinteh D. T., Krause R. W. M. and Oliver D. K. <u>Antibacterial activities</u> of plants from Central Africa used traditionally by Bakola pygmies for treating respiratory and tuberculosis-related symptoms.

Siwe Noundou X., Krause R.W.M. and van Vuurren S. <u>Alchornea cordifolia: A</u> source of antibacterial secondary metabolites.

Siwe Noundou X., Krause' R.W.M. and Moeno S. <u>Drug</u> <u>delivery systems (DDS) for</u> <u>anticancer drugs originated</u> <u>from medicinal plant</u>.



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