



April 2014



Faculty of Science NEWSLETTER

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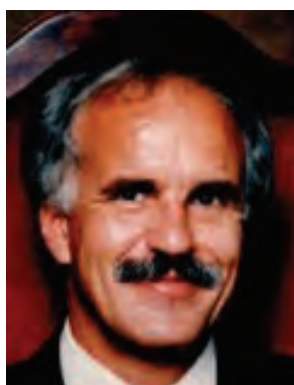
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www.uj.ac.za/science

New departments emerged in the Faculty of Science



Prof Betsie Jonck:
HOD Department of Pure
and Applied Mathematics



Mr Erick van Zyl:
HOD Department of
Biotechnology & Food
Technology



Dr PAP Nair:
HOD Department of
Applied Physics and
Engineering Mathematics

The Faculty of Science started 2014 with three new departments, namely the Departments of Pure and Applied Mathematics, Biotechnology and Food Technology and Applied Physics and Engineering Mathematics.

The Departments of Mathematics and Applied Mathematics changed to the Department of Pure and Applied Mathematics and the Departments of Biotechnology and Food Technology became the Department of Biotechnology and Food Technology. On the Doornfontein Campus a new department was established, namely the Department of Applied Physics and Engineering Mathematics. These departments, like all the other departments in the Faculty, will also be committed to the practice of science and technology, with the explicit aim of achieving outcomes which are crucial in the promotion of SET (Science, Engineering and Technology).

The Departments of Biotechnology and Food Technology were very small and could not effectively take up opportunities for funding, collaborations and postgraduate enquiries and for establishing meaningful research. Although the Departments of Biotechnology and Food Technology both have their own niche, the possibility for growth and of making independent contributions to the Faculty of Science and the UJ is now more likely. A merged Department will allow better identification and focus on strategic areas of research. Current staff can now be used for teaching across the modules of both departments. The WIL component, which is part of the diploma programmes of Biotechnology and Food Technology, can be further coordinated and developed and managed more effectively.

The Department of Applied Physics and Engineering Mathematics is located on the seventh floor of the John Orr Building on the Doornfontein Campus with a staff complement of 25.

The Department is in the process of a four year degree qualification in Applied Physics and Research to be offered from January 2016. Some of the special features of the degree are:

- Multidisciplinary approach to qualification and career
- Four areas of specialization in Applied Physics: Renewable Energy, Nanotechnology, Optical Techniques and Opto-electronics and Applied Spectroscopy for postgraduate studies in masters and doctoral
- Industry relevant learning modules in Business Practice, Quality Control, and Computer Programming
- Work integrated learning in the first semester of the fourth year through industrial training and research work and dissertation in the second semester
- Employment possibilities for immediate job seekers
- Research exposure at industries and research centres for immediate postgraduate study seekers
- Provision of modules for transferability between Faculties of Science, Engineering and Health Sciences

Industries and Research Centres are being consulted for their partnership on the offering of the four year degree in Applied Physics and Research and supportive messages are coming in from ESKOM, NECSA, etc.

In all our departments we offer a wide range of programmes in a diversity of disciplines and strive towards achieving quality and excellence in each of our departments namely: Academy of Computer Science & Software Engineering; Applied Chemistry; Applied Physics & Engineering Mathematics; Biochemistry; Biotechnology & Food Technology; Botany & Plant Biotechnology; Chemistry; Geography, Environmental Management & Energy Studies; Geology; Physics; Pure & Applied Mathematics; Statistics and Zoology.



FhuluFhelo Tshituhutuhu, matriculated in 2013 with five distinctions; Prof Azwinndini Muronga, Director: UJ Science Centre; Oletilwe Shuping, matriculated in 2012 with seven distinctions; and Thabang Motloung, matriculated in 2013 with six distinctions.

Science Centre students excel in Maths and Science

The University of Johannesburg (UJ)'s Science Centre at the Soweto Campus re-opens for its 2014 academic year on Saturday, 18 January 2014. The Centre was established in 2010 to open the door of knowledge for school children, teachers and the community of Soweto.

Through innovative science theory and laboratory lessons, computer training, exhibitions stressing on aspects of everyday life and other developments relevant to South Africa, the Science Centre is ideally poised to play an important role in nation-building efforts.

The principle activities of the Science Centre include:

- Teaching theory lessons in mathematics, physical sciences and life sciences
- Conducting supervised laboratory and tutorial sessions
- Teaching English for scientific communications, conducting computer training and offering bridging courses for matriculate
- Participating in organising National Science Week, public talks, expo day, science day, career guidance day and other science related activities including mobile science labs, exhibitions, and activities in the space laboratory for Hands-On-Universe and Universe Quest projects.

In 2013, the Centre had a total number of 821 learners from schools around Soweto and surrounding regions. Of these learners 82% showed an improved mark in the relevant subject. Learners attended supervised laboratory and tutorial sessions on Friday afternoons and theory lessons on Saturday and during school recess.

This year's programme is designed on a university model to introduce the learners to a university culture, thereby bridging the cultural gap between high school and university. The learners are also provided with the necessary learning material for each grade level.

The enhancement of teacher professional development at the Centre is further augmented through a Teacher Development Project coordinated as part of the partnership involving the South African Institute of Physics (SAIP), Institute of Physics (UK) and the University of Johannesburg.



Chemistry promotes undergraduate research

Chemistry students in the Faculty of Science are among the major beneficiaries of Dow Southern Africa's, recently concluded R 300 000 cash boost to fortify research and strengthen innovation and skills development.

The donation is supporting the Department of Chemistry's drive to encourage talented and motivated undergraduate University students to enrol for postgraduate programmes. The Department of Chemistry aims to ensure future sustainability by focusing on undergraduate research.

The students enrolling for the Undergraduate Research programmes, within the Department of Chemistry, will be paired, on different research projects, with selected senior students, who do well academically, are good communicators, are able to identify with students' needs and act as an interface between students and staff.

Dow's contribution will mainly be used to give Undergraduate Research Students a stipend, as an incentive for their involvement in research projects. The initiative continues to provide UJ with the opportunity of being involved in real-life and major industry research projects.



At the ceremony were Prof Angina Parekh, Deputy Vice-Chancellor at UJ; Ms Sazi Lutseke, MD for DOW Southern Africa and Prof Annah Moteetee, Acting Dean, Faculty of Science



In the front third from left; Prof Angina Parekh, Ms Sazi Lutseke, (in the Middle). At the back third from right; Prof Reinout Meijboom, Prof Annah Moteetee, Acting Dean, Faculty of Science and Dr Laetitia Den Drijven, HOD of the Department of Chemistry with the students in the Undergraduate Academy.



Botanist elected as Fellow of the African Academy of Sciences

Prof Ben-Erik van Wyk of the Department of Botany and Plant Biotechnology at the University of Johannesburg has been elected as a Fellow of the African Academy of Sciences. The announcement was made in November 2013.

Prof Van Wyk has a very impressive academic record with some 300 publications in peer-reviewed journals, more than 300 presentations at international and national conferences, 19 botanical books and 15 chapters in professional books (several of which have been translated into foreign languages such as German, Polish and Korean). He has been attached to the University of Johannesburg (former Rand Afrikaans University) since 1985. He specializes in the classification and naming of plants (plant taxonomy) and is author of several books, mainly on medicinal plants and useful plants.

Prof Van Wyk is a recipient of the Vice-Chancellor's Distinguished Award: Outstanding Researcher of the Year in 2009. He has received numerous sought-after awards and has extensive collaboration with individuals, societies and professional bodies at international and national levels. He is also an internationally known specialist on the medicinal and other uses of plants by indigenous communities of Southern Africa. As a case in point of the many awards bestowed on Prof Van Wyk, it was recently announced that an NRF Research Chair in Indigenous Plant Use has been awarded to Prof Van Wyk.

The University of Johannesburg now has two fellows (Prof Van Wyk and Prof Tshilidzi Marwala) and joins WITS (with Prof Phillip Tobias and Prof Viness Pillay) as the only two South African Universities with more than one Fellow of the African Academy of Sciences. Another South African, Prof Piet Steyn (US) was also among the newly elected fellows of 2013. Another newly elected fellow is Prof Ermiyas Dagne from the Department of Chemistry, University of Addis Ababa, Ethiopia. Prof Dagne is a regular visitor to UJ and a collaborator of Prof Van Wyk over a period of more than 20 years. South Africa now has a total of nine fellows of the African Academy of Sciences. The above-mentioned, as well as Prof Karim Abdool (MRC/UKZN), Prof Daya Ready (UCT), Archbishop Desmond Tutu and Prof Robin Crew (UP).



Prof Ben-Erik van Wyk



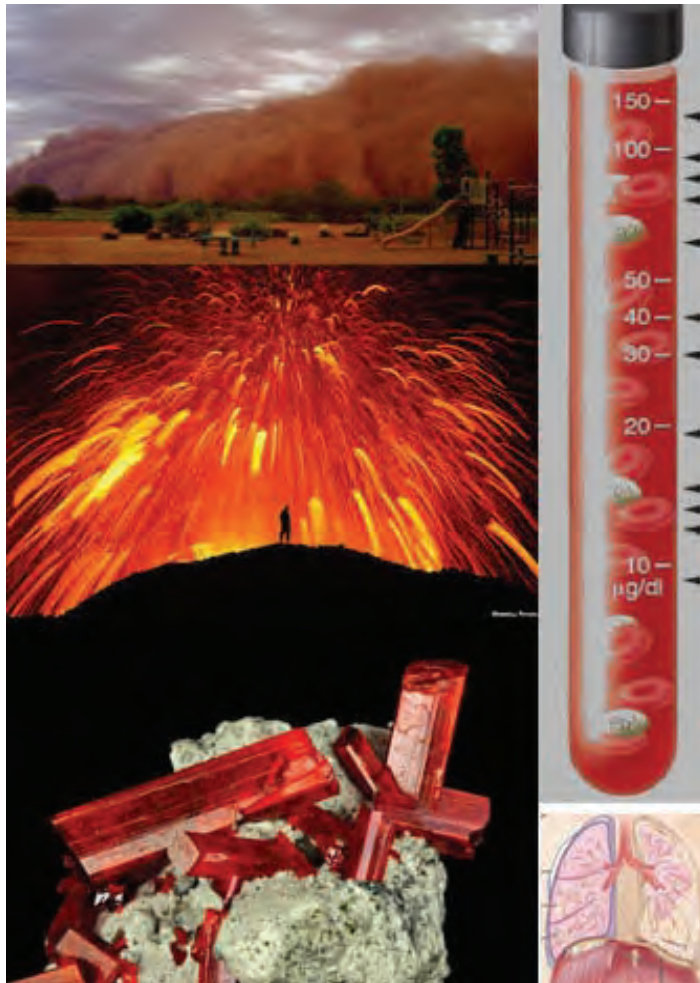
Prof Mishra (left) at the Award Ceremony

Researcher received prestigious Hind Rattan Award of 2014

Prof Ajay Kumar Mishra has been awarded the prestigious Hind Rattan Award of 2014 for his outstanding services, achievements and contributions at 33th International Congress of NRI in New Delhi, India. The Hind Rattan (Hindi phrase translated to English as Jewel of India) is one of the highest Indian diasporic awards granted annually to non-resident Indian citizens (NRIs) by the NRI Welfare Society of India, an organization under the umbrella of the Government of India. This Award recognizes Prof Mishra's contribution to the science of Nanoscience and Nanotechnology.

Prof Mishra, born in Varanasi, Uttar Pradesh, India, is currently working as an Associate Professor in the Department of Applied Chemistry, in the Faculty of Science. He is also an Adjunct Professor at the School of Materials Science and Engineering, Jiangsu University, China. Prof Mishra is internationally renowned and one of the most outstanding productive scientist/researcher. He has received numerous awards and medals as well as fellowship of academies and societies. He is also a member of editorial boards and editor of a number of international journals and books.

UJ hosts first International Symposium on Medical Geology in Africa (ISMGAf) 2014



The University of Johannesburg will be hosting the first International Symposium (ISMGAf) on Medical Geology in Africa from 24 to 26 March 2014.

Medical Geology is an emerging multi-disciplinary and cross-disciplinary field of science dealing with the impact of the geologic materials and processes on the incidence and spatial/temporal distribution of human and animal diseases. Historically, the two disciplines, namely the geological sciences and the medical sciences were regarded as completely independent fields. However, recent advances in science and technology have proven that the geology of an area can have a direct impact on the regional input of elements and nanoparticles of minerals into soil, air and water. In turn these inputs, depending on composition and concentrations, may result in beneficial or harmful health effects in humans, animals and/or plants. Therefore, by understanding the geological history of our environment in general, we will contribute towards a better and deeper insight into our understanding and mitigation of a range of natural hazards that affect our society.

Although there is a growing interest in Medical Geology in the world, it is in Africa that application of research results would be most relevant. However, it is also in Africa that this field is least developed. Considering the possible significance of the health problems related to geological materials and processes in African countries in general, we believe that it is time to bring together experts from various fields of science including geoscientists, toxicologists, epidemiologists, medical experts, public health scientists, biotechnologists, biochemists, biologists...etc.. in order to discuss the possible sources as well as the fate and impacts of geological factors and materials on the development of human and animal diseases.

Our overarching goal of ISMGAf is to provide a platform for discussions and development of research programs and training of postgraduate students in this emerging field of science.

We believe that these discussions will lead to a better characterization and understanding of the occurrences of trace elements and toxic compounds in the air, groundwater, soil and rocks and will help to explain patterns of diseases such as various cancers, cardiovascular diseases, osteoporosis...etc.

We hope that colleagues from various departments within the Faculty of Science, as well as other Faculties such as Health Science at UJ and other universities in South Africa will find this initiative of interest and will join us in this event.

The symposium is sponsored by the University of Johannesburg (UJ), the Geological Society of South Africa (GSSA), the International Union of Geological Science (IUGS), the International Medical Geology Association (IMGA) and the British Geological Survey (BGS).



Prof Hassina Mouri



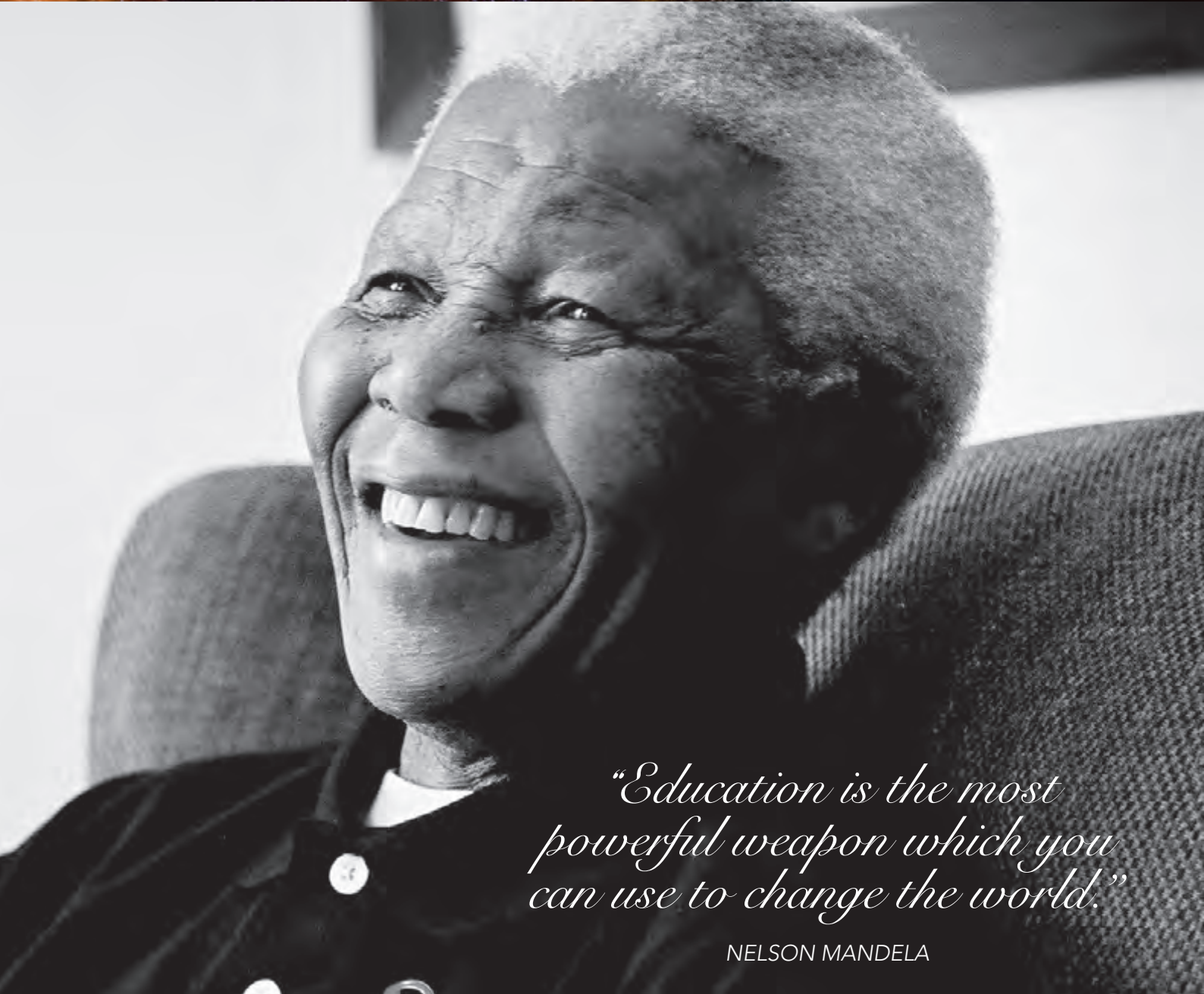
What Mandela meant for Science in South Africa

We realize, that South Africa would not now be participating so strongly in the process of science if democracy and reconciliation had not been ushered in by peaceful negotiations, culminating in the elections of 1994. Before this time, apartheid South Africa, had become increasingly characterized by violent repression, economic and political isolation, and also isolation from global scientific participation. Quality education was reserved for a minority of the population so that the majority was essentially excluded from the process of science, learning and research. The science system itself was non-transparent and geared to the survival of a militarised nation under siege.

Prof Simon Connell from the Department of Physics at the University of Johannesburg reflects on Nelson Mandela's contribution to Science in South Africa.

This has all changed very spectacularly. As Mandela said "Education is not a privilege, but a right – the doors of learning must be opened for all". Indeed, South Africa now has a vigorous, healthy and growing scientific research system, open to all, and with an excellent global profile. Most obviously, South Africa successfully won the bid to bring the major part of the global Square Kilometer Array (SKA) project to Africa. The SKA will soon become the world's largest radio astronomy telescope, capable of seeing back in time to the afterglow of the big bang, and capable of searching for dark matter, amongst many other fascinating and very impactful topics. This successful bid was well supported by two decades of wise investment in major astronomy infrastructure development and capacity building within the country. This followed the recognition up to cabinet level during Mandela's presidency that Southern Africa had a niche geographical advantage for astronomical observation. South Africa is now strongly supporting the Namibian bid to host the southern hemisphere portion of the Cherenkov Telescope Array (CTA). This will be the world's largest gamma ray telescope. This renewed entry to global science by the development of major locally based international research infrastructure is matched by improved access to other major international research infrastructure abroad. In May this year, South Africa signed an agreement with the European Synchrotron Research Facility (ESRF), where it became the first African country to be associated with this premier international light source. This reflected the significant level of participation developed over the last two decades by South African scientists from a wide range of disciplines in synchrotron-based research at about ten synchrotrons spread over four continents. Several years earlier, South Africa signed a government level agreement with the Joint Institute of Nuclear Research (JINR) in Dubna, leading to improved collaboration there. Of the very many impactful local national-scale research infrastructure developments, one can single out the establishment of the National Institute for Theoretical Physics (NITheP). It is significant because it is a visionary step even for a developed country. This has promoted international exchange within this field, and lead to a strong growth in the national footprint of high caliber theoretical physics. The inclusion of strong support for science at its most abstract level evidences the long range vision of the new democratic policy makers and excellent rapport between them and the new local and international physics community. Indeed, the first new Science and Technology Policy was adopted during Mandela's presidency. There are many other examples of new investment in significant local major research infrastructures, as well as in University-based laboratories. The access to research and learning is, of course, now available to all, and in the last two decades, the representation matches the demography of the country. At tertiary level, a mood of optimism has swept through the research community.

One premier international research infrastructure has made headlines many times over the last two years, capturing the scientific imagination of the world. A Higgs boson was discovered at a global science facility, CERN's Large Hadron Collider (LHC), in July 2012. In October 2013, the Nobel Prize for Physics was awarded to two of the theorists who predicted the existence of the Higgs Boson. The award citation made specific mention of the discovery at the LHC. South Africa was involved in this global scientific campaign based at the LHC. This gigantic machine will continue to uncover new physics, and amongst others, we expect it to find the particulate content



“Education is the most powerful weapon which you can use to change the world.”

NELSON MANDELA

of dark matter, and emphasise the strong connection to the major new astronomy facilities in Southern Africa. Scientists believe a new golden age of discovery has dawned, in several fields, and happily, because of the transition to democracy, South Africa is now involved. South African participation at CERN was first recognised at government level with the signing of a Collaboration Agreement on the 4th of July, 1992. This was in fact once South Africa set out on the road to democracy. In those earlier days, South Africa participated in the NA43, NA59

and NA63 experiments and in the use of the ISOLDE Facility. South Africa formerly joined the ALICE experiment in 2001 and the ATLAS experiment in 2010. These are major global collaborations at the LHC. Theoretical physics interaction connected to CERN has also developed. Spin-offs for South Africa which have manifested or are in development include IT technology (big data, high throughput data), accelerator technology (research), nuclear energy technology (modeling) and mining technology (ore sorting).

The connection between the appropriate political climate and the opportunity to participate in global science is very clear from the South African example. The growth of science in South Africa, with many specific examples, such as the direct participation of South Africa in the global science drive to discover the Higgs Boson, owes much to Mandela. However, Tata Madiba, as he is affectionately known in South Africa, would be the first to maintain “What we have achieved is the collective effort of every South African.”



Prof Simon Connell

Apart from creating a general political climate favourable to research, Mandela was known to intervene directly when science became politicized. An example was the contentious politics surrounding health issues in South Africa. He appealed, "In the face of the grave threat posed by HIV/AIDS, we

have to rise above our differences and combine our efforts to save our people. History will judge us harshly if we fail to do so now, and right now."

Mandela realised that Africa needed new premier scientific institutions, and he championed the formation of the Nelson Mandela African Institute of Science and Technology (NM-AIST), which now has a network of schools spread across Africa. The NM-AIST vision is to become a world-class institution of higher learning dedicated to the pursuit and promotion of excellence in science and engineering, and their applications for economic growth and sustainable development in Africa.

Barack Obama said that many years ago, while he was still a student, Mandela stirred something within himself. "It woke me up to my responsibilities to others and to myself, and it set me on an improbable journey that finds me here today". He was speaking at Mandela's Memorial Service as President of the USA. The inspiration of Mandela is therefore felt by all. The blossoming of new opportunities for global partnerships in an optimistic vision for South Africa are so tangible that they are sometimes termed "Madiba magic" in the media, or by scientists, the "Mandela effect". In many cases, as in the previous paragraph, they embody a Pan-African vision. The "Mandela effect" has given impetus to both improved and new major scientific collaborations world-wide. These are of course too numerous to mention more than a few. This year the SA-Germany - Year of Science was celebrated, recognizing deep joint contributions to research

and capacity building partnerships. A particularly important contribution by the international community has been participating in specialist missions to develop science policy and assess science performance in South Africa. An excellent example is the 2004 Shaping the Future of Physics exercise, which set the stage for the tremendous growth in the health of that discipline. One of the International participants, Jim Gates, was later to write that his experience in South Africa on this project "began the preparation for me for my service as a policy advisor for both the Governor of Maryland and for President Barack Obama". A special relationship has emerged between the South African Institute of Physics and the National Society of Black Physicists (NSBP) in the USA. Although all people in the world have their roots in Africa, with these colleagues, those roots are more recent. A host of joint projects with a Pan-African vision have arisen. Lawrence Norris of the NSBP has mused that "from South Africa a wave of democracy, openness and cooperation will sweep the globe."

Mandela's direct involvement in science may be seen as linked to his firm belief about the power of education in building democracy and development. He said, "Education is the most powerful weapon which you can use to change the world".

It is on this topic of education that I want to end this article. Democracy, seen as one of the "Legacies of Mandela", ushered in a new era for science in South Africa. Sadly, basic education provision has failed to match this. Seen on a general national basis, it is evidently in a state of near collapse, and severely prejudices the sustainability of the magnificent scientific advances. Mandela's focus on children, and his identification of the importance of education, has in fact not been sufficiently respected.

The contribution of Mandela to democracy in South Africa has therefore paved the way for the South Africa's scientific renaissance. This has been at the research level. It is imperative, as supported by Mandela's clear injunction, that the basic education system experience a similar renaissance.



Awards to researchers in science

Vice-Chancellor Distinguished Awards for Excellence – 2013

Prof Michael Henning, from the Department of Mathematics within the Faculty, has received the UJ Vice-Chancellor's Distinguished Award for Outstanding Researcher of the Year. Prof Henning is regarded as a world-leader in domination theory in graphs. The Vice-Chancellor Distinguished Awards for Excellence is to honour employees for their research, teaching excellence, innovation, hard work and dedication.

FACULTY OF SCIENCE AWARDS

The Faculty of Science awards each year prizes for the highest research output produced in the previous year – one to an academic staff member appointed on the level of Associate Professor or Professor and one to an academic staff member appointed on the level of Lecturer or Senior Lecturer.

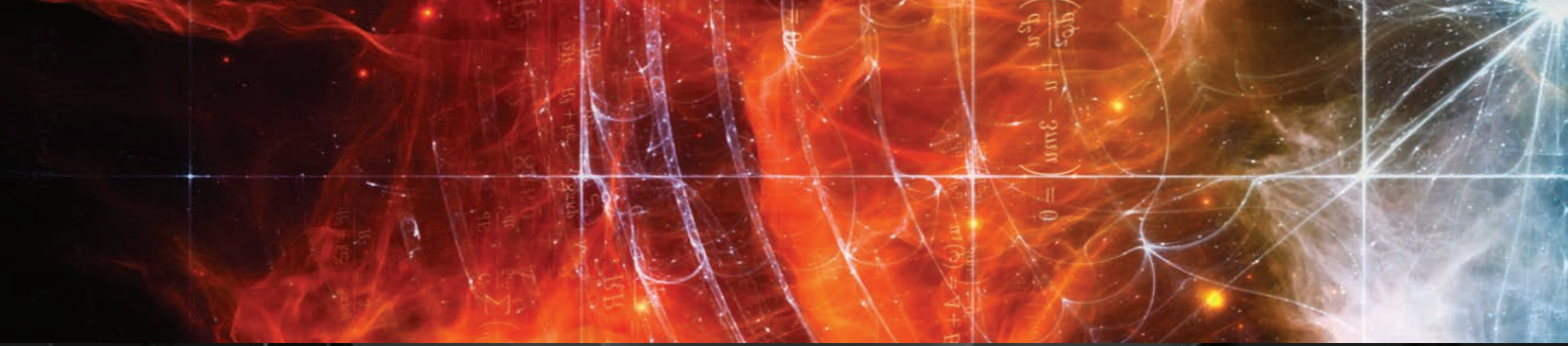
Recipients of the Faculty Awards



Professor Mike Henning, Professor in the Department of Mathematics, received the Faculty Award for best researcher at Professorial level in the Faculty of Science. Prof Henning also received the UJ Vice-Chancellor's Distinguished Award for Outstanding Researcher of the Year. Prof Henning is regarded as a world-leader in domination theory in graphs.



Prof AJ Muller from the Department of Chemistry received the Faculty Award for best young researcher in the Faculty of Science. Dr Muller left UJ for Free State University a while back but re-joined UJ in 2008. He is a passionate crystallographic chemist who has succeeded in establishing himself in his research niche. He is intensely involved with, and committed to, his students and projects, both here and at other institutions.



At the Inaugural lecture: Prof Gert Sabidussi; Prof Peter Dankelmann; Prof Ihron Rensburg, Vice Chancellor and Prof Annah Moteetee, Acting Dean, Faculty of Science.

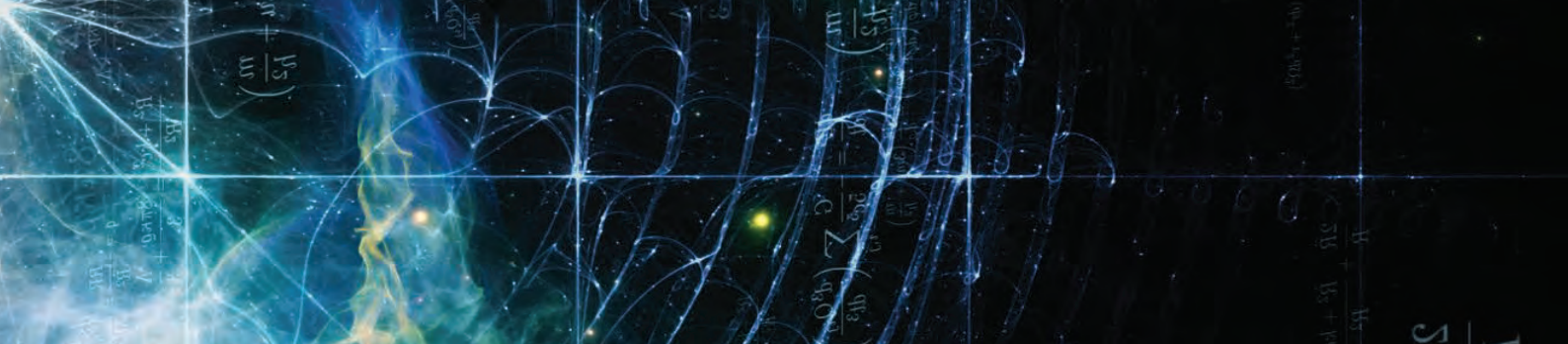
Inaugural Lecture: *Graphs, Google and Six Degrees*

Prof Peter Dankelmann from the Department of Mathematics delivered his Inaugural Lecture entitled *Graphs, Google and Six Degrees*.

Abstract

Networks are present in several aspects of our daily lives. Social or professional networks, computer networks such as the World Wide Web or the intranet at our workplace, transportation networks such as the Gautrain rail system, and electrical networks such as the Eskom power grid influence our lives significantly. The economic network of banks who lend each other funds has been in the spotlight after the subprime crisis, in which the failure of some banks forced other banks, which they owed significant amounts, into bankruptcy, almost causing a domino effect.

Graph Theory is the branch of mathematics that is concerned with the study of networks. In this lecture we use results of modern graph theory to investigate the so-called small world phenomenon. This phenomenon is the fact that surprisingly often we find that we are connected to perfect strangers, often through common acquaintances, even if geographically and socially they seem worlds apart from us. We then look at one of the biggest and most important networks, the internet, and observe how the Google search engine employs Graph Theory to help us find websites or information with surprising ease.



Abbreviated CV: Prof Peter Dankelmann

Prof Dankelmann joined the University of Johannesburg in 2012. He was born and educated in Germany, where he received his PhD in mathematics from Aachen University. After completing his PhD, he joined the Mathematics Department of the then University of Natal in Durban as a postdoctoral researcher for a year, after which he took up a permanent position in this Department as a lecturer. Following promotions to Senior Lecturer and Associate Professor, he was promoted to the rank of Professor in 2007.

Prof Dankelmann is an active researcher in graph theory, a modern branch of mathematics that is concerned with the study of networks. So far he has published over 75 research papers in peer-reviewed international journals, and he is currently completing a book on his research specialty, *Distances in Graphs*. He is a member of the editorial board of the international journal *Utilitas Mathematica*, and a founder member of the editorial board of the international journal *Electronic Journal of Graph Theory and Its Applications*. In 2005 his then University, UKZN, nominated him for the national NSTF Science and Technology Award in category B for the best contribution of an individual over the past 5 years. In 2007 he was elected a member of the South African Academy of Science. He currently holds an NRF B-rating.

Although his true passion is for research and teaching, he has also been involved in other aspects of University life. During his time at the University of KwaZulu-Natal, he served on numerous committees, most notably on Senate, the Senate Steering Committee, the University Research Committee and the University Council.

Outside the University, Prof Dankelmann has been actively involved in the promotion of science, especially mathematics. For nearly a decade he was the National Organiser of the South African Interprovincial Mathematics Olympiad, a mathematics competition between teams of learners from the different provinces. Since joining the University of Johannesburg, he has been instrumental in setting up the South African Tertiary Mathematics Olympiad, a mathematics competition between universities, which first took place in 2012 as an initiative of the University of Stellenbosch and the University of Johannesburg.

Prof Dankelmann also has a passion for the game of chess. During his time in Durban he twice won the title of KZN Chess Champion, and he served the Durban Chess Club as President for over a decade. His greatest joy, however, is spending time with his wife Hazel, and their son Thomas.



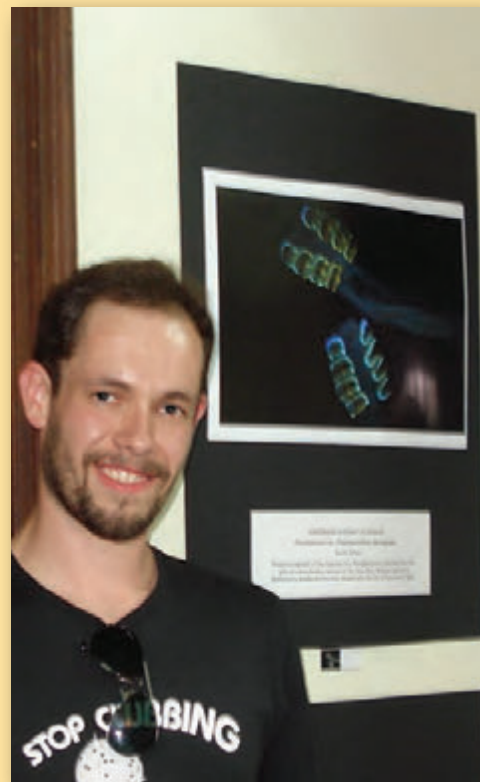
Bursary for IT student

James McGuire from Reddam House Bedfordview walked away with the R10 000 bursary (all the necessary admission requirements are applicable) from the Faculty of Science for study in the Faculty. At the IT Winter School a task was given to the group to solve and he was the best performer in the group. James is currently a first year student in The Academy of Computer Science and Software Engineering in the Faculty of Science

Photo captured by Zoology student won first prize

Quinton Dos Santos, MSc student in the Department of Zoology, Supervisor Prof A Avenant-Oldewage, won the first prize in the WIRSAM BIOLOGICAL OPTIC/LASER category competition for his picture of fluorescing *Paradiplozoon* clamps.

The competition was hosted by the Microscopy Society of Southern Africa. He received a digital camera sponsored by Wirsam company.



Public Lectures 2014

- ~ 18 February: Prof Jannie Ferreira
- ~ 8 April: Prof Bettine Jansen van Vuuren
- ~ 13 May: Prof Ben-Erik van Wyk
- ~ 29 July: Dr David Ellefsen
- ~ 6 August: Prof Ben-Erik van Wyk
- ~ 21 August: Prof Marianne Cronje
- ~ 2 October: Prof Bruce Cairncross
- ~ 23 October: Dr Chris Engelbrecht

Department of Applied Chemistry on the move



Prof Ngila

Researchers acquired NRF research grant

Prof Catherine Ngila and Prof Titus Msagati of the Department of Applied Chemistry have received a generous NRF research grant for a nanotechnology project entitled Field Flow Fractionation/Liquid and Gas Chromatography Inductively Coupled Plasma Mass Spectrometry (FFF/LC/GC-ICP-MS) Equipment for Characterization of Nanoparticles and Metals Speciation (Organic and Inorganic forms) in Water and Wastewater Systems.

The two-dimensional gas chromatography - mass spectrometry with time of flight detector (GCxGC MS-TOF) – recently acquired is of value to different department in the Faculties of Science, Engineering and Health Sciences at UJ, as well as other institutions in the country. The Department can now boast of state- of -the- art compendia of analytical equipment.

Researchers in the Department will be very active this year and utilize their energy on their research projects. Numerous substantial awards were bestowed on the researchers:



Dr Pillay



Dr Nkosi



Dr Mabuda



Prof Mhlanga



Dr Govender

- The Department is proud of Dr Kriveshini Pillay, Dr Duduzile Nkosi and Dr Nonhlagabezo Mabuba by bringing in NRF Thuthuka funding to the Department
- The Department, through Prof Mhlanga, has been awarded the NRF Nanotechnology Flagship titled Energy efficient nanofiltration water purification technologies for rural communities in South Africa. This flagship confirms the Department's national leadership in the area of nanotechnology and water research.
- Ms Nomngongo (prospective graduate), Dr Mittal and Dr Kuvarega have received NRF Postdoctoral awards
- NRF postgraduate student bursaries were awarded to Ms Khunoana - NRF PhD innovation, Mr Eric Agorku - NRF African Scholarship for PhD and Mrs Olorundare NRF African Scholarship for MSc
- Prof Catherine Ngila, Prof Sabelo Mhlanga, Dr Penny Govender and Dr Kriveshini Pillay have received substantial funding from the Water Research Commission (WRC) for water research projects
- Congratulations to Eutlerio Chauque for receiving The Best Award at the fourteenth WaterNet: Water Supplies and Sanitation Session in Tanzania. Phumlani Msomi MSc presentation obtained second prize at the South African Nanoscience Young Researcher's Symposium held at the CSIR in Pretoria.

BIOCHEMISTRY'S POSTGRADUATE STUDENTS DISPLAYED THEIR RESEARCH

Postgraduate and postdoctoral students of the Department of Biochemistry shared their research progress at the Research Day of the Department.

Biochemistry Research Day 2014

FIRST PLACE in MSc, PhD and Postdoctoral

MSc



Siobhan Jenkins

PhD



Nicola Skerman

Postdoctoral



Abi Mannu

SECOND PLACE in MSc, PhD and Postdoctoral

MSc



Tamsyn Jeffery

PhD



Vanessa O'Neill

Postdoctoral



Arnaud Djami-Tchatlhou

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