Welcome to all new staff and students who joined the College of Agriculture, Engineering and Science family in 2018. The year began with leadership engaging in a workshop to align College strategy with the University's vision. The key issues related to strategic direction of College and Schools were reviewed:

(1) Efficient service delivery, (2) Leadership and senior staff authority, responsibility and accountability, (3) Revised research strategy – enhancing output quality and quantity through active participation at all levels and well planned competition, (4) Teaching strategy vis-à-vis student numbers, quality, staff workloads, facilities, curriculum revision, (5) Finance, (6) HR: College staffing, staff performance management and staff (talent) development – model champion, (7) College branding and visibility and (8) Staff wellness and collegiality.

The College remains steadfast in its progress to achieve its identified goals for 2018. We look forward to the finalisation of the new strategy and the enhancement of our performance in a collegial and cooperative spirit.

Teaching and Learning has shifted focus to meet the strategic plan of the University and to this end numerous projects have been undertaken in the Schools through funding from UCDP. The focus is to improve the student experience at all levels. The message from teaching and learning for 2018 is that things cannot be business as usual. The burgeoning student numbers have placed resources under severe constraints and as such we need to think out of the box and reinvent the *modus operandi* to account for these increases. Another area that is undergoing significant change within the teaching and learning space is the official launch of the new council approved Centre for Academic Success in Science and Engineering (CASSE). The establishment of this centre provides a home for the Access students and staff as well as enhances the student experience in the Access programme.

The College of Agriculture, Engineering and Science continues to be at the forefront of research in the University, with significant local, national and international contributions to science and to society. UKZN is increasingly focusing on the quality of research output, and is developing both incentives and support mechanisms to improve output quality, thus enhancing the University’s reputation and international standing. On an operational front, the University is replacing the IRMA reporting system with the new Converis system from September, which will enhance research reporting and evaluation.

The College will continue to work with Schools and the Human Resources Division, to ensure that UKZN produces top quality education and the cutting-edge research it is known for while also achieving its transformation goals.

We congratulate our support and academic staff for the major achievements of the College to date which are worth noting:

- We have achieved first year student enrolment figures of 2135 that will allow us to meet the 2018 targets.
- We achieved excellent graduation numbers across all Schools.
- We remain one of the top achievers when it comes to research productivity.
- We continue to provide excellent services to our students and staff through ADOs, Student Support Services, Science Access and Public Relations.
- Our student leadership has developed and maintained an improved relationship with College leadership.
- We congratulate all staff and students who ensured that the disruption of examinations was handled well.

Finally, I would like to thank all staff for their dedication and commitment during the semester. Please enjoy the stories and celebrate the success of CAES achievements.

Albert
CAES College Awards Recognise Top Achievers

Top students within the College of Agriculture, Engineering and Science at the College Awards.

At the Pietermaritzburg ceremony, award sponsors included Acacia Operations Services, Allan Gray, Barclays, Bruker SA, DMT Kai Balla, Inqaba Biotech, Kerry, Lathabho, Meroe, NITHePerkinElmer, the South African Mathematical Society, the South African National Space Agency (SANS), Statistics South Africa, Whitehead Scientific and Zeiss.

Individual sponsors included Anne Alexander, G.J. Bateman, the late Herby Govinden and Hanno Rund.

At the Pietermaritzburg ceremony, award sponsors included Kwanalu, Standard Bank, the Citrus Growers’ Association, Kwanalu, Standard Bank, the Citrus Growers’ Association.

CAES Celebrates its Distinguished Teachers

Akerman has contributed to initiatives to improve teaching in the School as a lecturer and Academic Leader of Teaching and Learning. He has developed innovative teaching resources and assisted in the development of new modules and in reviews of Chemistry and Physics curricula.

Lokhat teaches fundamental and applied chemical reaction engineering and is known to make delivery of information more appealing. The highly-published, approachable teacher is a great mentor and supervisor. His innovative research has attracted considerable funding and numerous accolades.

Pillay prioritises understanding how to lead creatively and innovatively, and encourages the posing of “disruptive” questions. He explores different teaching methodologies and approaches, and has introduced a form of peer learning to develop higher order thinking skills. He routinely runs class debates, and emphasises inquiry-driven experimental training.

Hansraj communicates the innate beauty in Mathematics through developing teaching aids including a write-in workbook for first-year Engineers, websites and videos. Hansraj has published high school study material and articles about the teaching of Mathematics, and is a popular speaker at teaching conferences. Hansraj is a well-published researcher and supervisor, collaborating with researchers world-wide.

CAES students within the College of Agriculture, Engineering and Science at the College Awards.

Zooming in on Agripreneurship and Sustainable Agricultural Value Chains

Agripreneurship and sustainable agricultural value chains were the main topics of presentation at the third annual Ukulninga Howard Davis Memorial Symposium hosted by UKZN at its Ukulninga Research Farm in Pietermaritzburg.

Topics at the two-day gathering ranged from agripreneurship to technological and postharvest innovation. Local NGOs, including the Syaazulisa Trust and the Institute of Natural Resources, presented, as did the student organisation, Enactus.

The event - an initiative between UKZN and long-time supporter the Howard Davis Farm Trust based in Jersey in the Channel Islands - attracted more than 200 delegates and guests.

The symposium honours the educational legacy of Mr Howard Davis who was killed in the Battle of the Somme in 1916 during World War 1.

Facilitated by the UKZN Foundation, the symposium brings together stakeholders in KwaZulu-Natal’s agricultural industry to showcase research carried out at Ukulninga for the scientific community, agribusiness sector, farming community as well as pupils.

Guests and delegates included students, academics, scientists, small-scale farmers, commercial farmers and NGO representatives. The event proved to be a multidisciplinary information-sharing forum featuring representatives from the Schools of Agricultural, Earth and Environmental Sciences (SAEES) and Engineering, as well as from industry and NGOs.

Deputy Vice-Chancellor for Research, Professor Deresh Ramjugernath, opened the symposium with an introduction to the University’s Strategic Plan 2017-2021.

From left: Ms Josephine Pasipanodya, intern plant breeder, Profes; Nd Mbilu Majola, Ms Manga; Mrs Mathombi Duma, Swayimane and Mrs Lungile Mkhongl, elEthemweni Municipality, at the Symposium.

From left: Ms Josephine Pasipanodya, intern plant breeder, Profes; Nd Mbilu Majola, Ms Manga; Mrs Mathombi Duma, Swayimane and Mrs Lungile Mkhongl, elEthemweni Municipality, at the Symposium.

UKZN’s Award-Winning Stand Delights at Annual Royal Show

Three years in a row, the College of Agriculture, Engineering and Science (CAES) has won the Royal Industrial Floating Trophy for Best Display in an individual building at the annual Royal Show in Pietermaritzburg.

The College also received a gold medal for its impressive display and the team was commended for its customer service.

The stand delighted visitors with exhibits including snakes, tenrecs, guinea pigs, tarantulas, cockroaches, a hydroponic display, a plant tissue culture laboratory display, hydrological model and much more.

UKZN is known for its interactive, innovative and educational exhibitions, which this year included an automated weather station and a display highlighting the work being done by the University, the South African Sugarcane Research Institute (SASRI) and Dube TradePort Special Economic Zone’s Dube AgriLab, a plant tissue culture laboratory working on micropropagation of sugarcane, other crops and ornamental plants.

Informed students showed visitors around some of the displays. There were also magical science shows from Dr Tanja Reinhardt, of the Science and Technology Education Centre. Ms Swasti Maneỳ attributed the success of the stand to the contributions of staff and students who assisted. Participating disciplines included Agrometrogramy, Biosources (Agricultural), Engineering, Crop Science, Hydrology, numerous Life Sciences disciplines from Zoology to Biology, as well as the Aquatic Ecosystem Research group.

The four academics in UKZN’s College of Agriculture, Engineering and Science (CAES) have each received a 2017 Distinguished Teacher Award (DTA).

A DTA recognises innovative and sustained teaching efforts, of staff who balance their research and teaching responsibilities, dedicating themselves to excellence in teaching and learning.

The four academics are Dr Matthew Akerman of the School of Chemistry and Physics (SCPF), Dr David Lokhat of the School of Engineering, Dr Ché Pillay of the School of Life Sciences, and Dr Sudan Hansraj of the School of Mathematics, Statistics and Computer Science.

Akerman has contributed to initiatives to improve teaching in the School as a lecturer and Academic Leader of Teaching and Learning. He has developed innovative teaching resources and assisted in the development of new modules and in reviews of Chemistry and Physics curricula.

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CAES staff and student assistants at the winning Royal Show stand with their trophy.
UKZN researchers have been recognised by the South African National Biodiversity Institute (SANBI) and uMgungundlovu District Municipality (UMDM) for their leadership in a climate change adaptation project assisting those most vulnerable to adapt and survive in an environment where extreme weather events are becoming commonplace.

At Adaptation Futures, an international climate change conference held in Cape Town in June, there was a focus on the uMgeni Resilience Project (URP), an initiative supported by the global Adaptation Fund and administered by SANBI in partnership with the Department of Environmental Affairs. The URP aims to increase resilience of vulnerable communities through interventions such as early warning systems, climate-smart agriculture and climate-proofing settlements. Lightning is one risk to people’s lives, crops and herds in the Swayimane area with its extreme weather and mountainous terrain.

UKZN and uMgungundlovu Municipality Leading in Climate Change Adaptation

Mr Vivek Naikien, Dr Aliistro Clulow and Dr Tafadzwa Mabhauthi in front of the screen displaying readings at Swayimane High School.

The project is one of two in South Africa receiving financial support from the Adaptation Fund valued at around $7.5 million. The URP is working towards the development of an integrated early warning system focusing on floods, fire and seasonal forecasts to help community and disaster management officials when possible disasters approach. This component is already seeing results. Another aspect will involve climate proofing through examining of how homes and facilities are built and how protecting the environment can secure settlements against the harsh weather.

URP researchers are working to create platforms for reflecting on how South Africa, specifically different spheres of government, are preparing and responding to climate change induced disasters.
UKZN unveiled new state-of-the-art laboratories on its Westville campus at an event that included academics and more than 30 external research institutions and industry.

The University has invested R14 million into the Peptide Sciences Laboratory and Laser Chemical Vapour Deposition (LCVD) and Thin Films Laboratory, which were officially opened on 7 March by Vice-Chancellor and Principal Dr Albert van Jaarsveld, with guest speaker Dr Mathew Moodley, post-doctoral researcher in the SCP examining plant-based technologies and innovation.

Moodley’s presentation highlighted how that academic should assist with the recalibration of society, saying that innovation builds a nation, incentives skills development and enables long-term planning, leading to increased resolve and lessons in scale and pace. Manilal said UKZN is moving in the right direction to play a role in socio-economic development in South Africa, noting that these facilities announce the value proposition of the university to industry.

Van Jaarsveld thanked guests for their attendance and for working with UKZN. He also gave an overview of the University’s new strategic plan and research flagship’s, saying that facilities like these will service all of UKZN’s research flagship and form a foundation for a university promoting innovation and entrepreneurship.

The Peptide Sciences Laboratory, housing the latest instrumentation, will be the only one in South Africa dedicated to the synthesis of peptides with pharmaceutical purposes; including biomaterials, nanotechnology and drug discovery. This laboratory will accommodate around 20 postgraduate and postdoctoral researchers under the leadership of A-rated scientist Professor Fernando Albericio.

The LCVD and Thin Films Laboratory will be home to the only state-of-the-art pulsed laser deposition system in the Southern Hemisphere. The instrument is capable of coating atomically thin layers of most solid materials onto any substrate that is up to 50mm in diameter. Thin films, and multi-layered thin films, play a crucial role in most modern functional devices such as integrated chips in computers, computer hard-drives, solar cells, superconducting materials, ultra-hard coatings, high-tech sensors and optical coatings. The advanced system in the laboratory will take researchers on a new path of materials discovery, and increase throughput in materials research and make UKZN more competitive in developing new devices. Pioneering researcher Dr Mathew Moodley will oversee the LCVD and Thin Films Laboratory.

UKZN Post-Doctoral Researcher attends State of the Nation Address

Post-doctoral researcher in the School of Chemistry and Physics (SCP) at UKZN Dr Nomfundo Mahlangeni attended the State of the Nation Address (SONA) in Cape Town on the invitation of Parliament. One person from each province who it was felt had made a significant impact on society was invited.

‘It was truly an honour to be invited as a prominent guest at the SONA’, said Mahlangeni. Mahlangeni made headlines in 2017 when she received her PhD in Chemistry at the age of 28 after overcoming tremendous odds that included coming from a single-parent home of four children. Parliamentary representatives called Mahlangeni’s story inspirational, impacting positively on the lives of many South African women.

Mahlangeni achieved her master’s degree cum laude, continuing on to PhD level and is now working as a post-doctoral researcher in the SCP examining plant-based technologies and their application in antimicrobial and anticancer studies.

Mahlangeni said being able to speak about science to prominent officials was a privilege. She had also raised the issue of funding and how African contributions to Science and technology organisations.

Representatives of organisations and institutions in Africa and other parts of the world also attended. The conference created a forum for South Africans involved in the field of nanotechnology and nanoscience, including technologists, entrepreneurs, scientists, engineers and researchers, to interact on the latest developments and future trends in the multidisciplinary field.

UKZN’s Professor Vincent Nyamori, Chairperson of the local organising committee, told delegates that ‘the hosting institution, and under the auspices of the UKZN Nanotechnology Platform, we are honoured to have your support’. Proceedings included oral and poster presentations on a wide array of topics in nanotechnology and nanoscience.

Nyamori said the standard of reporting was exceptional, and praised participants for their enthusiasm.

At the welcoming ceremony, Professor A Khumalo of the South African Nanotechnology Initiative (SANI) emphasised the role of the SANI in the conceptualisation of nanotechnology in South Africa.

Khumalo acknowledged the efforts that led to the establishment of the conference 14 years ago and congratulated organisers of this year’s prestigious event, which was supported by SANI, UKZN InQubate, UKZN, the DST, the Department of Trade and Industry (DTI) and the Water Research Commission (WRC), among others.

‘The area of nanotechnology is one in which the University is heavily invested,’ said UKZN Vice-Chancellor and Principal Dr Albert van Jaarsveld.

Organisations, including the WRC, said the event helped them to identify gaps they could help fill in relevant research. A participant from the Council for Scientific and Industrial Research noted the value of the multidisciplinary nature of nanotechnology to contribute to things like materials development in South Africa.

A one-day technical workshop hosted by UKZN InQubate on the commercialisation of nanotechnology in Africa was well received, with delegates commenting that they were inspired by the experiences shared by various start-up companies who presented.

‘The aim is to encourage researchers to not look at their research only from a scientific perspective but also from an industry needs perspective, and break down silos to get researchers to talk with industries to ensure the commercialisation of their research and inventions.’

The School of Chemistry and Physics together with UKZN InQubate recently held a seminar on the commercialisation of nanotechnology in Africa which included representatives of organisations and institutions in Africa and other parts of the world.

‘The challenges students face in finding employment are heavy, ’ said UKZN Vice-Chancellor and Principal Dr Albert van Jaarsveld.

Delegates at the NanoAfrica Conference in Salt Rock.

Speakers address participants at the seminar.

Super Highway of Innovation Seminar Empowers Students

The School of Chemistry and Physics (SCP) at UKZN recently held a seminar on the commercialisation of nanotechnology in South Africa. The seminar was part of a series of seminars aimed at empowering students in the field of nanoscience and nanotechnology.

Targeted at postgraduates, the goal of the seminar was to offer advice and give a head start to those keen to turn opportunities into businesses, revealing the growing role of entrepreneurship in South Africa’s economic growth.

The challenges students face in finding employment are heavy, leading them to develop entrepreneurial skills to empower and employ themselves and others.

Academic leader in Research at UKZN’s School of Chemistry and Physics Professor Noel Koobbanan addressed students on transforming research work into viable businesses and also on the large number of opportunities available to young entrepreneurs.

Director of Intellectual Property and Commercialisation at InQubate Mrs Suvinia Singh guided students through the process of starting up a business, the importance of intellectual property and explained the shift in business in the emergent 4th industrial revolution.

InQubate believes that the students are the business leaders of tomorrow and the goal is to give them a successful start and show them how to run businesses, showing confidence in the potential of their work to improve the world.

Through its skills development STEPUP and its networking activities such as the Mind to Market initiative, UKZN InQubate is making a concerted effort to promote entrepreneurship as a viable and essential offering at the University.
Congratulations to all our graduands. At the 2018 ceremonies, the College of Agriculture, Engineering and Science conferred 1684 degrees and diplomas out of a university of 9656. This included 120 PhDs, 195 Masters, 345 Honours and 993 Bachelor degrees as well as 29 Postgraduate diplomas. The University awarded honorary doctorates to Professor Tebello Nyokong (Science), Mr Trueman Goba (Engineering) and Dr Pali Jobo Lehohla (Science). Professor Naven Chetty and Professor Gueguim Kana received the Distinguished Teachers’ Award (DTA) from the University of KwaZulu-Natal.
Women in Innovation and Creativity Celebrated on World IP Day

The brilliance, ingenuity, curiosity and courage of women who are driving change in the world and shaping our common future were celebrated at the Annual World Intellectual Property Day (IP Day) event on UKZN’s Howard College campus at Unite.

World IP Day aims to highlight the role intellectual property rights (patents, trademarks, industrial design, and copyright) play to encourage innovation and creativity. InQube is responsible for ensuring research done at UKZN is developed into solutions for society collaborated with Spoor & Fisher Attorneys and College of Agriculture, Engineering and Science. ‘The award is a clear indication of research excellence in our College. We are very proud of her and will continue to support her in her endeavours’. "

The School of Engineering has been recognised for the maturity of its research group in waste resources management thanks to the national Waste Research, Development and Innovation (RD) Roadmap. The School has been developing a coursework Master’s in Waste Resources Management with the Department of Science and Technology (DST) which is currently under review.

Trois Chair will focus on technology and waste management strategies.

Trois highlighted the multidisciplinary nature of the Chair which boasts researchers from life sciences, environmental sciences, sociology, housing, planning, economics and others working in the arena. The Chair will also capitalise on existing collaborations between various disciplines of engineering.

The brilliance, ingenuity, curiosity and courage of women who are driving change in the world and shaping our common future were celebrated at the Annual World Intellectual Property Day (IP Day) event on UKZN’s Howard College campus at Unite.

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Guest speakers at this year’s event were Dean and Head of the School of Engineering, Professor Cristina Trois, Director of the South African Sugarcane Research Institute (SASRI), Dr Carolyn Baker, Ms Tertia Beharie of Spoor & Fisher Attorneys, and Professor Annegret Stark of the Sugarcane Biorefinery Research Chair.

In her presentation, Stark reflected on her successful journey as a woman innovator in science and engineering.

UKZN Host 2018 SA Solar Energy Conference

The focus of the Southern African Solar Energy Conference (SASEC) hosted in Durban by UKZN in June 2018 was on solar photovoltaic and solar thermal energy technology systems and applications.

SASEC is the premier gathering for engineers, scientists and researchers from the Southern African Development Community region to exchange cutting-edge information on developments in the fields of solar thermal energy, photovoltaics, resource assessment and policy.

Senior lecturer in Mechanical Engineering at UKZN, Dr Michael Brooks chaired the conference.

Solar energy holds enormous potential for fossil-fuel dependent countries to move towards sustainable power generation practices,’ said Brooks. ‘This is particularly true in our own country, South Africa, where the solar resource is extremely good and the power distribution network is well developed. Against this backdrop, the SASEC conference has for many years provided researchers and industrial participants with a forum to exchange ideas on energy policy, to propose new technologies suited to the local context and to help develop a new generation of solar energy engineers. UKZN was proud to host the 2018 SASEC conference and to welcome delegates to sunny Durban,’ he said.

Sharing their expertise on this subject matter was keynote speakers Dr Michael Geyer and Dr Claudia Buerhop-Lutz. Geyer is the Managing Director of Abengoa Solar GmbH and the Director Business Development Europe and Africa at Abengoa.

Quadriplegic Archery System - World-Leading Innovation

The Discipline of Mechanical Engineering at the University of KwaZulu-Natal is developing a quadriplegic Archery System, a device allowing a Quadriplegic to draw, aim and fire a compound bow.

Final-year Engineering students within the Discipline of Mechanical Engineering at UKZN, are researching and developing the concept of a Quadriplegic Archery System that has more unique features than common “para-friendly” archery systems. Whilst a target-shooting archery system currently exists for paraplegics, one does not exist for quadriplegics.

The idea for the project came about when Mr Darron Tarr, Principal of John Wesley School, approached Professor Glen Bright (Mechanical Engineering, UKZN) with the concept of making archery an exciting sport for 25-year-old quadriplegic Mr Clinton Eccles, an acquaintance of Tarr.

The engineering of this system will be unique for quadriplegics and is to be the hard work of students: Mr Tyrone Bright, Ms Lindelwa Diamini, Mr Matthew Harcus and Ms Michaela Geytenbeek.

Quick release mechanism. Another arrow will automatically be released. This process will take place whilst the system vibrates with the frequency obtained from Eccles’ heart rate. As Eccles concentrates and his anxiety levels alter, his heart rate will increase; simulating muscle fatigue which able-bodied archers experience.

Eccles became a quadriplegic in a serious car accident several years ago and is looking forward to being a part of this momentous project. Students Bright, Diamini, Harcus and Geytenbeek are working on this project as their final-year Mechanical Engineering project for 2018.

From left: Dr Carolyn Baker, Ms Tertia Beharie, Professor Annegret Stark and Ms Suvina Singh.

Baker’s address was titled the value of Intellectual Property at SASRI. Protection in an Agricultural Industry Context, in which she highlighted the value of IP and how new cultivars of sugar could improve variety. Beharie spoke on women who are inspiring inventors, highlighting a number of successful individuals. 
Thuthuka Grant Awards for Five UKZN Researchers

Five researchers in the School of Life Sciences’ Biotechnology cluster on the Westville campus have been awarded National Research Foundation (NRF) Thuthuka Grants to support their work.

Dr Oliver Zishiri and Dr Matthew Adeleke of the Genetics Discipline, Dr Nontobeko Eunice Mvubu of Microbiology, and PhD candidate Ms Seipati Mokhosi and Dr Karen Pillay of Biochemistry received grants for their work in the fields of antibiotic resistance, infectious diseases in poultry production, virulence in tuberculosis, neurobiochemistry, nanotechnology and magnetotactic bacteria.

Thuthuka funding supports emerging researchers working in academic professional appointments at public universities, science councils and other public research institutions.

Professor Shahidul Islam, the Academic Leader of the School of Life Science’s Biotechnology Cluster on the Westville campus, said the securing of the grants was a great achievement for the young researchers involved.

The research includes Zishiri’s work on the public health crisis of antibiotic resistance (AR) using a One Health approach that recognises the interconnection between animal, human and environmental health. This project will contribute to understanding of how livestock and agriculture contribute to AR.

Adeleke received a grant for his research into the genetic diversity and genomics of the Eimeria species – protozoan parasites that cause coccidiosis, an infectious disease affecting chickens and other livestock. Adeleke hopes this grant will contribute to the control of coccidiosis in South African poultry.

Dozens Rally for Durban Harbour Clean-Up and Campus Recycling Drives

Coinciding with World Oceans Day, PhD candidate and environmental activist, Ms Refilwe Mofokeng organised two clean-up events in Durban intended to influence people’s opinions on the treatment of litter, particularly plastic.

The first was a recycling drive on UKZN’s Westville campus during which 40 volunteers spent almost two hours collecting 200kg of litter and learning about recycling drives that could contribute to solving pollution problems on campus.

“We hope to involve other campuses in recycling and start monthly clean-ups,” said Mofokeng, who is also an educator. She plans to approach businesses and potential partners to work with her organisation, perhaps even hosting inter-university competitions.

The second event was a harbour clean-up during which more than 200 volunteers from all walks of life joined Mofokeng and other volunteers to clear litter; collecting 400 bags which amounted to half a ton of refuse.

A PhD candidate in the School of Life Sciences, Mofokeng established the REFLOVE Mofokeng Non-Profit Organisation (NPO) to execute her vision for education to effect sustainable habits, and through which she arranges clean-up events, measures the effects of pollution on marine life, assists with school food gardens and gives motivational speeches. She hopes these activities will help counter issues of pollution and littering; preventing them rather than attempting to fix the consequences.

Postgraduate School of School of Life Science Research Day Proves a Success

The School of Life Science hosted their annual Research Day at the Pietermaritzburg campus with great success.

The programme was opened by Dr Timotehus Van Der Niet, Senior Lecturer in the School at the Pietermaritzburg Campus, who acknowledged and expressed appreciation to all organising members and sponsors for their role in supporting the event.

The event provided postgraduate students with a grandstand to showcase their research as well as an opportunity to engage and network with academics, colleagues and external visitors.

“The main aim is to give postgraduate students an opportunity to showcase their research, the second aim being to provide students with a constructive environment to practice what it is like to present in such conferences,” said Dr Van Der Niet.

More than 150 participants attended the event which comprised of both postgraduate students and staff from the PMB and Westville campuses.

A total of 39 postgraduate students delivered their oral presentations in three sessions. In between each session were six external plenary speakers who discussed their research and how it has helped them broaden their profession.

The event attracted a number of external exhibitors and sponsors such as AEC-Amnesham; Analytical Solutions; APEX Scientific; Celtic; Molecular Diagnostics; Chemetrix; ESCO; LABOTEC; LICHRO; Prestige Laboratory Supplies; Sep Sci; Separations; Trilab Support; United Scientific SA; VACUTEC; White Scientific; WIRSAM Scientific; and Zeiss. The students and participants found the exhibitor’s research displays and interactions informative and enlightening.

After an intensive day of presenting and networking, the function concluded with a prize giving ceremony.

PhD Students Fly UKZN Flag at International Nanotechnology Conference

Two PhD candidates from UKZN’s School of Life Sciences received Best Paper awards for their oral presentations at the annual International Conference on Nanomedicine, Drug Delivery and Tissue Engineering (NNDTE’18) in Budapest, Hungary.

The International Conference on Nanomedicine, Drug Delivery and Tissue Engineering aims to become the leading annual conference in fields related to nanomedicine, drug delivery and tissue engineering.

The PhD students, Mr Jude Akinyelu and Mr Lorenzo Davids, both completing their research under the supervision of Professor Moganavelli Singh, presented on their work concerning nano-delivery systems for anti-cancer agents.

Akinyelu presented about his research on the development of ligand orchestrated nano-delivery systems for precise delivery of conventional anti-cancer agents. Akinyelu hopes this will contribute to an improvement in the efficiency of chemotherapy and the reduction of toxicity associated with the use of chemotherapeutics. Akinyelu acknowledged the National Research Foundation (NRF), World Academy of Sciences, UKZN’s College of Agriculture, Engineering and Science, Professor Singh, and members of the non-viral gene and drug delivery laboratory for their support of his research.

Davids’ presentation dealt with the targeted delivery of a single chemotherapeutic drug called 5-Fluorouracil encapsulated by chitosan using gold nanoparticles as a delivery vehicle. For his PhD, Davids is focusing on developing an efficient drug delivery vector built around gold nanoparticles capable of selectively targeting cancerous cell lines using transferrin receptors for the delivery of the anti-tumour drugs 5-Fluorouracil and doxorubicin. He says the development of a safe and efficient drug delivery system has the possibility to change current treatment regimens.

Akinyelu and Davids said the event provided the opportunity to present some of their findings to an international audience and to establish connections with experienced researchers in the field of nanotechnology, creating opportunities for future collaborations. Responses from delegates to the presentations were positive, with delegates intrigued by the research underway in the non-viral drug and gene delivery laboratory at UKZN.
School of Mathematics, Statistics and Computer Science

Lecturer Champions Discipline of Statistics

Former Statistician-General of South Africa Receives Honorary Degree

Students, postdoctoral researchers and staff from UKZN’s Astrophysics and Cosmology Research Unit (ACRU) delivered well-received presentations at the Square Kilometre Array (SKA) postgraduate conference in Cape Town.

The SKA funds astronomy and engineering students and postdoctoral researchers who have a record of academic excellence and an interest in working on the project.

The conference was attended by a large number of professional South African and international astronomers.

UKZN’s delegation, the biggest university group in attendance, delivered excellent presentations which resulted in significant engagement with the audience. The event provided an opportunity for participants to share ideas and experiences involving the astronomy landscape and also led to discussions about future collaboration with local and international astronomers.

ACRU doctoral student Ms Sinenhlanhla Precious Sikhosana delivered a poster presentation on: Diffuse Radio Emission in ACT/Pal Clusters, which is the subject of her research.

ACRU masters student Mr Kabelo Kesebonye presented a poster on his work titled: Radio Frequency Interference (RFI) Measurements at a Possible HIRAX Outrigger Site in Botswana.

Computer scientists, Dr Brett van Niekerk.

Computer Science Academic Addresses SADC Cybersecurity

An academic in the School of Mathematics, Statistics and Computer Science (SMSCS), Dr Brett van Niekerk, addressed a Southern African Development Community (SADC) Cyber Security Workshop, with the theme ‘Enhancing Cyber Security in the SADC Region’. The workshop was hosted by the South African government and 12 countries were represented.

Presenters from a number of government departments and industry provided insight into a wide range of topics, including governance and legal perspectives of cyber security, international relations considerations, cyber security capacity development, and technologies, as well as topics from various industry sectors.

Dr van Niekerk participated in the academic session on the workshop chaired by Dr Kiru Pillay, Chief Director of Cyber Security Operations at the Department of Telecommunications and Postal Services. Dr van Niekerk’s presentation was on the role of academia in cyber security, which outlined both the strengths and challenges faced by South African universities in providing skilled graduates for the growing cyber security job market. The role of academic research was discussed, and research conducted by Dr van Niekerk and his postgraduate students was showcased.

There is expected to be a large shortage of skilled cyber security professionals, and graduates of tertiary institutions of skills shortages in Statistics and Mathematics fields in South Africa, and UKZN’s and Stats SA’s laudable efforts to combat this by teaching school teachers statistics through a legacy programme, one which Zondo has contributed to passionately.

The School of Mathematics, Statistics and Computer Science (SMSCS) lecturer is currently working on her PhD under the supervision of Professors Delia North and Temesgen Zewotir, having started at UKZN as a developmental lecturer in 2015.

Zondo cites curiosity as a driving force in her pursuit of an academic career.

Zondo said she has appreciated the collegial nature of her Department at UKZN, as well as the opportunity to grow and develop under the UKZN banner. The kind of student she encounters at UKZN, she said, also inspires her to make a difference using her skills and abilities.

Being involved in Statistics Education capacity building drives at UKZN, led by North, and contributing considerably to the five-year Math4Stats project run at UKZN for Stats SA are just some of the ways Zondo is applying her skills to impact those around her. She has helped with a Research and Teaching project with the Department of Higher Education and assists Grade 12 learners from disadvantaged schools to prepare for their final Mathematics exams.

UKZN Delegates Deliver Impressive Presentations at SKA Conference

Students, postdoctoral researchers and staff from UKZN’s Astrophysics and Cosmology Research Unit (ACRU) delivered well-received presentations at the Square Kilometre Array (SKA) postgraduate conference in Cape Town.

The SKA funds astronomy and engineering students and postdoctoral researchers who have a record of academic excellence and an interest in working on the project.

The conference was attended by a large number of professional South African and international astronomers.

UKZN’s delegation, the biggest university group in attendance, delivered excellent presentations which resulted in significant engagement with the audience. The event provided an opportunity for participants to share ideas and experiences involving the astronomy landscape and also led to discussions about future collaboration with local and international astronomers.

ACRU doctoral student Ms Sinenhlanhla Precious Sikhosana delivered a poster presentation on: Diffuse Radio Emission in ACT/Pal Clusters, which is the subject of her research.

ACRU masters student Mr Kabelo Kesebonye presented a poster on his work titled: Radio Frequency Interference (RFI) Measurements at a Possible HIRAX Outrigger Site in Botswana.

Kesebonye plans to read for a PhD in Astronomy so that he can further develop his instrumentation and research skills.

Said senior Astronomy lecturer at the ACRU Dr Matt Hilton: ‘The annual South African Radio Astronomy Observatory (SARAO) bursary holders’ conference provides a valuable opportunity for our postgraduate students and postdocs to gain experience in delivering presentations. The range of work being done in South African radio astronomy is very impressive, including the engineering and science projects with MeerKAT. I was encouraged by the overall level of the presentations delivered by students and postdocs. The plenary talks organised by SARAO were also excellent.’
Students visiting the decade old specimen displays at Frank Bush Zoological Museum, Pietermaritzburg Campus for the International Museum Day.