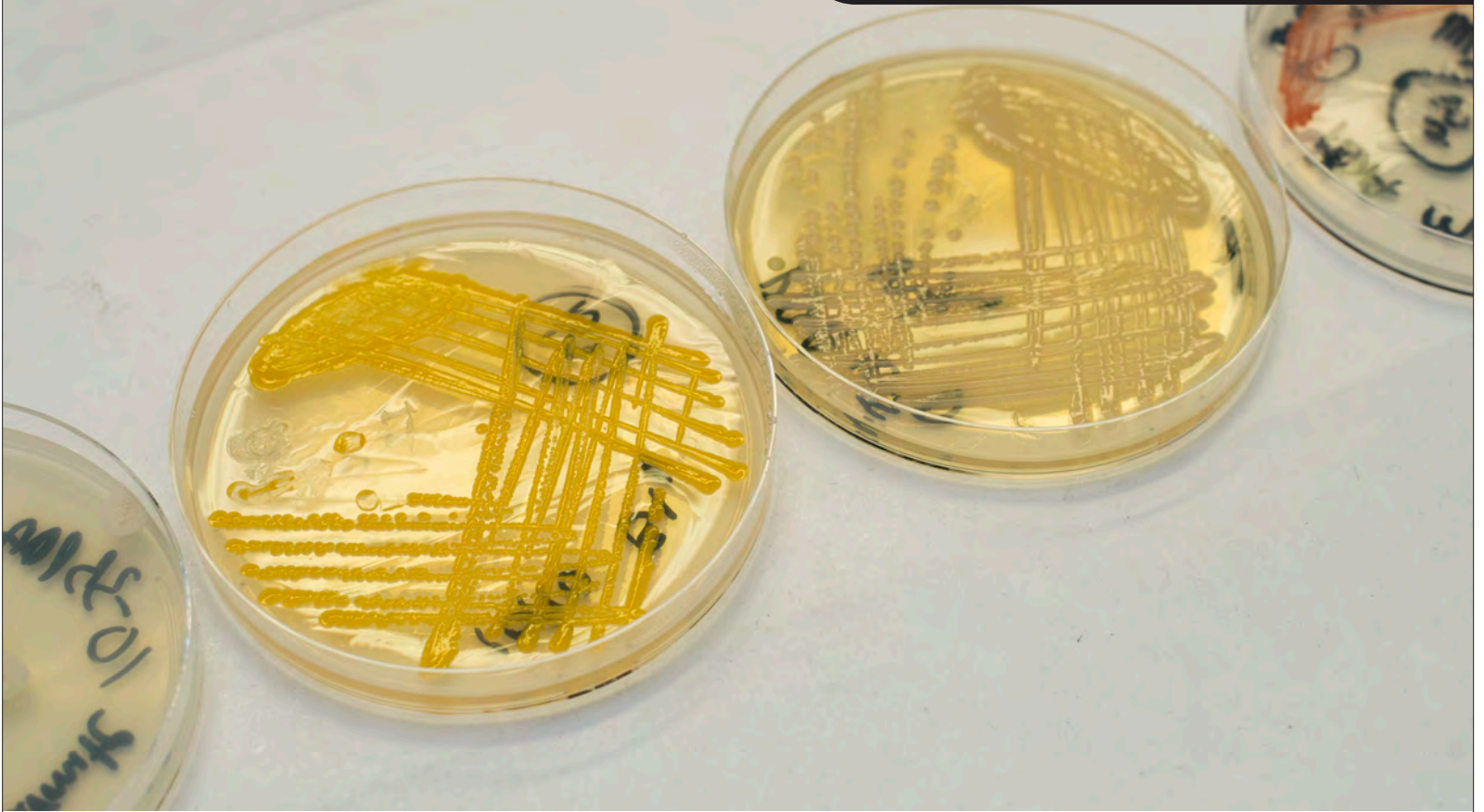


JUNE 2020



SCIENCE @UJ

NEWSLETTER OF THE
FACULTY OF SCIENCE
UNIVERSITY OF JOHANNESBURG
LEADING SCIENTISTS, INNOVATIVE TECHNOLOGISTS



A Message From The Executive Dean



We are in the midst of the biggest global health crisis in recent decades; the disease caused by the novel Corona virus of 2019 or Covid-19 for short. In our country this month, the number of new infections by the causative agent SARS-CoV-2, are on the rise alongside the decrease in lockdown restrictions. Our economy needs to be restarted, so more people have to be allowed to go back to work, but it is still very much incumbent upon all of us to remain vigilant, to wear face masks and to strictly follow hygiene and social distancing regulations, in order to keep ourselves and others safe.

This newsletter, though released much later than the first one in 2019, gives me a fortuitous opportunity to express my sincere gratitude to the majority of our academics who took on the challenge of accelerated online teaching and learning that Covid-19 thrust upon us, without complaint, and delivered outstanding training opportunities for our students. Best practice developments in this regard are being compiled and will be shared widely. I am encouraged by the novel research around the world looking for and finding solutions to Covid-19 on all levels; from 3-D printed protective and ventilation equipment to the novel antivirals and prototype vaccines under development. This newsletter also provides examples of contributions from our Faculty to the Covid-19 battle, thus far.

Last year was a very productive research year for our faculty, judging by the > 400 publication units delivered as well as the 113 MSc and 49 PhD degree graduates. We celebrate our staff and students' recognition through awards and prizes, and highlight ongoing and new community engagement activities. This newsletter shares information on achievements and activities in the Faculty from the past 6 months and promises to be an interesting and enjoyable read.

The new OS rankings information released early June indicates UJ as having made its first entry into the global 500 top universities, we will provide more detail on this in our next newsletter.

Opinion Article: Responsible Citizenship Needed In The Face Of Covid-19

The Executive Dean of Science recently wrote an opinion article published by News24, which highlights some of the things that individuals can do to help themselves and others to be safer during the health crisis caused by the Covid-19 pandemic. In the article, Professor Debra Meyer writes "As a country, we are in a state of disaster, because by all accounts, we are facing possibly the worst health crisis of our lifetime. Not all South Africans are responding to the crisis as responsible citizens should". You can read the full article on: <https://www.uj.ac.za/newandevents/Pages/Responsible-citizenship-needed-Covid-19.aspx>

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UJ Researchers Educating The Public About Covid-19

Several researchers from our Faculty took on the task of educating people and communities about the Covid-19 pandemic through research, opinion pieces and media interviews.



Prof Abidemi Paul Kappo (Left) and Prof Frank von Delft (Right)

Prof Paul Kappo (UJ Biochemistry) co-authored a Covid-19 research paper on computational modelling of the 2019-nCoV-RBD/ACE-2 complex and Prof Frank von Delft (Visiting Professor @ UJ Biochemistry) was interviewed by Sky News regarding the structural biology aspect of fighting Covid-19. He was also interviewed for an article urging chemists to have a practical input in the fight against Covid-19. Read more on <https://bit.ly/3fGCnHT>



Prof Sebastian "Basie" von Solms (Left) and Dr Jaco du Toit (Right)

Prof Basie von Solms (Academy of Computer Science & Software Engineering - ACSSE) gave a TV interview on the use of Zoom and other related services, and he published an invited paper on safer video conferencing via Litnet, which he translated for UJ specifically. He also contributed Covid-19 articles to Netwerk24, including one on Covid-19 and 5G networks. Meanwhile, Dr Jaco du Toit (ACSSE) was interviewed by Radio Disa on helping people to use their 'lockdown time' to learn something new or increase existing skills. Read more on <https://bit.ly/3hO4KGf>



Prof Farai Nyabadza (UJ Mathematics & Applied Mathematics) and his team (Dr F Chirove, Dr M Visaya and Mr W Chukwu) published a research paper on Covid-19 social distancing projections, resulting in a TV interview with ENCA and articles by News24, Radio 702, Health24 and TimesLive. Prof Nyabadza also co-authored the paper "quantifying early Covid-19 outbreak transmission in South Africa and exploring vaccine efficacy scenarios". Read more on <https://bit.ly/3fq6Gm1>



Prof Bettine van Vuuren (UJ Zoology) co-authored an article highlighting the impact of Covid-19 on postgraduate research. She also co-authored an opinion piece published by The Conversation on what "zoologists should learn from a zoonotic pandemic", which led to an interview with ENCA. She was also interviewed by UK media outlet, The Independent newspaper regarding the impact of the lockdown in South Africa on the animals in the Kruger National Park. Read more on <https://bit.ly/3ef0yws>



Dr Elize Smit (UJ Chemical Sciences) wrote an opinion piece published on the Daily Maverick. In the article, she highlights how people can limit the spread of Covid-19 with good hygiene practices and provides a simple explanation of the science behind soaps and sanitisers. Dr Smit explains that "To be effective, sanitisers must contain at least 70% alcohol, which makes them highly flammable. As such, you should never use or store hand sanitisers near an open flame or heat source and never try to ignite them on purpose". Read more on <https://bit.ly/3fr4sCZ>

SARChI Holder honoured with a Lifetime Award for exceptional contributions to the natural sciences



The South African Academy of Science and Arts honoured Prof Ben-Erik van Wyk with the 2020 M.T. Steyn Medal for Natural Sciences and Technology research and excellence. Prof van Wyk is a research professor at the Department of Botany and Plant Biotechnology, an internationally acclaimed researcher and the Holder of the South African Research Chair Initiative (SARChI) in Indigenous Plant Use. He was conferred with this 'once in a lifetime award' for his creative contributions to the exploitation, organisation and continued development of the natural sciences or technology and its successful application, in the nation's interest. Read more on <https://bit.ly/2zqY2of>

The African Academy of Sciences and the Royal Society awarded £300 000 FLAIR Fellowship to UJ Chemist



Dr Leah Matsinha, a postdoctoral research fellow at UJ's Department of Chemical Sciences, was UJ's only recipient of the 2020 Future Leaders – African Independent Research (FLAIR) Fellowship, awarded by the African Academy of Sciences and the Royal Society. She was selected from a competitive pool of more than 400 applicants and only 30 fellowships were awarded. Dr Matsinha was selected based on her research being focused on the needs of the African continent. As part of the fellowship, she will receive up to £300 000 to conduct research over a two-year period. The FLAIR fellowships help early career researchers to develop independent research careers in African institutions. Read more on <https://bit.ly/2B1DxPr>

UJ Geologist awarded 1st prize for capturing the “art in science” at SAASTA & HSRC Competition



Professor Bruce Cairncross was awarded first prize in the “Science Close-up” Category of the 2019/ 2020 South African Science Lens Competition, which is organised by the National South African Agency for Science and Technological Advancement (SAASTA) and the Human Sciences Research Council (HSRC). The competition honours the wonder of science through photography, and displays how science and art can coexist. It also encourages researchers and scientists to invite the public into their world by creating interesting photographs of their research. The winning photograph from Prof Cairncross was that of a sample with different geological minerals from a fluorite mine. Read more on <https://bit.ly/2MOazFn>

UJ Zoology alumna receives Chancellor's Medal for her master's dissertation on ARVs



Ms Khesa Pitso passed her master's dissertation with distinction (93%), becoming one of the top achieving graduates who earned Chancellor's Medals. She is one of only seven UJ master's graduates who were awarded a Chancellor's Medal, the highest student honour from the University. Her research was based on the premise that access to antiretroviral drugs (ARVs) for people living with HIV and AIDS cannot be overemphasized. The context of her research indicated that a small amount of the ARVs are absorbed by the human body while the rest end up in the municipal sewage treatment plant works. Read more on <https://bit.ly/2MQwmwb>

The American Botanical Council (ABC) confers Champion Award on UJ Botany PhD student



Mr Thomas Brendler (a PhD student under Prof Ben-Erik Van Wyk at the Department of Botany and Plant Biotechnology) received the American Botanical Council (ABC) 2019 Champion award at the 15th Annual ABC Celebration and Awards Ceremony in California, on 4 March. He has co-authored numerous books, book chapters, and scientific articles, and is on several editorial boards. In response to his win, he said: "We don't do what we do with awards in mind. We find satisfaction and gratification in the opportunity to contribute to the shaping of the herb, botanical, and phytomedicinal industry". Read more on <https://bit.ly/2XU9hPb>

UJ computer scientist and ballerina graduates after master's dissertation on ballet pose recognition



Ms Margaux Fourie, a lecturer at UJ's Academy of Computer Science and Software Engineering recently graduated with a master's degree in computer science. Her dissertation was based on her passion for computer science and ballet. Ms Fourie said "As a computer scientist, I have a passion for solving problems, and I've also always loved and pursued ballet. At the start of my post-graduate studies, these two passions were introduced to one another as I began research in pose recognition using computer vision. One of the main challenges I faced in my research was the limited datasets available for ballet. Another problem was the lack of experienced dancers available for capturing the required data". Read more on <https://bit.ly/37vDMY5>

Our Professors are Finalists in the Prestigious National Science and Technology Forum-South32 Awards



Prof Dubery



Prof Nomngongo

Congratulations to Prof Ian Dubery and Prof Philiswa Nosizo Nomngongo on their nominations as finalists in the prestigious National Science and Technology Forum-South32 Awards. Prof Dubery (Department of Biochemistry) was nominated as a finalist in the Special Annual Theme Award: Plant Health. Prof Nomngongo (Department of Chemical Sciences) was nominated as a finalist in two categories, the TW Kambule-NSTF Award: Emerging Researcher, and the Engineering Research Capacity Development Award. Prof Nomngongo recently became the youngest holder of a Tier 1 SARCHI when the NRF approved her appointment as the new Holder of the SARCHI: Nanotechnology for Water for the next 5 years.

The National Academy of Science India elects UJ Visiting Professor as a Fellow



Prof Prabhugouda M. Patil (a Visiting Professor at UJ's Department of Mathematics and Applied Mathematics) has been elected as a fellow of the National Academy of Science India (NASI) for his outstanding contributions to the field of Mathematical Modeling aspects of fluid flow problems. The results of his models have been useful for design engineers to control various parameters of heat and mass transfer. A hearty congratulations to Prof Patil, who is also a Professor in the Department of Mathematics at Karnatak University in Dharwad, India.

GEMES Researcher joins the Editorial Board of Dialogues in Human Geography



Dr Innocent Sinthumule, a Senior Lecturer at the Department of Geography Environmental Management and Energy Studies (GEMES), became a member of the Editorial Board of Dialogues in Human Geography (an international journal) in February. He is currently the only editorial board member from a South African or African university. Members of the editorial board consist of researchers from different universities worldwide, including the University of California at Berkeley, University of Hong Kong, University of British Columbia, Università di Bologna and University College London.

Career Interviews: Chemical Sciences, Geology, Zoology and Food Technology

A number of researchers from our Faculty were interviewed and asked to shed light on their careers and the requirements for a career in the natural sciences and academia.



Dr Banothile Makhubela was interviewed by ISET Careers SA Magazine and she pointed out that her interest in science was sparked by "insects that emit light when they fly". She also found chemistry more understandable at school, which ultimately led to her choosing a career as a Chemist and researcher. Read more on <https://bit.ly/3e6xYxS>



In **Prof Hassina Mouri's** interview with ISET Careers SA Magazine, she highlighted that her career as a Medical Geologist was influenced by her growing up in an area surrounded by beautiful rivers and rocky mountains (which sparked her curiosity) and a special interest in health science. Read more on <https://bit.ly/2ABzwcC>



Prof Bettine van Vuuren's interview with the South African National Antarctic Programme (SANAP) concentrated on women empowerment and her career as a Zoologist. She emphasised the importance of choosing the right career. Her advice for choosing a career is that every person should carefully consider their passion and strengths. Read more on <https://bit.ly/2MSuIdi>



Dr Oluwafemi Adebo was interviewed by the International Food Information Services (IFIS) regarding his career as a Food Technologist. In his response, he noted that early career researchers need to start building career skills early, surround themselves with individuals who bring out the best in them and be determined to succeed. Read more on <https://bit.ly/37sYsXR>

New accreditations for our food technology and actuarial science qualifications



The Institute of Food Technologists has accredited our undergraduate food technology qualification

The Undergraduate Food Technology Qualification offered by UJ's Department of Biotechnology and Food Technology received a badge of approval from the Institute of Food Technologists (IFT), a leading global organisation for food science professionals and technologists. The accredited program underwent a rigorous assessment to confirm that it complies with the high IFT Undergraduate Education Standards for Degrees in Food Science. Other universities that carry this seal of approval include Cornell University, McGill University, Michigan State University and several other international universities. Congratulations to the department on this great achievement. Read More on <https://bit.ly/3fiiioiS>



Our BSc Actuarial Science is officially accredited with the Actuarial Society of South Africa

The Department of Statistics, under the leadership of Mr Jacques van Appel, recently announced that its BSc (Actuarial Science) qualification has become level one accredited with the Actuarial Society of South Africa (ASSA). The accreditation makes UJ one of the few South African universities accredited by the ASSA, the governing body for the actuarial profession in South Africa. UJ's BSc Actuarial Science qualification was officially offered in 2018 and presents an excellent opportunity for students to study towards becoming qualified actuaries. Congratulations to the department, including the department's actuaries, Mrs Leila Lederman and Mr Soshan Soobramoney. Read More on <https://bit.ly/3hciwC2>

Introducing new advanced diplomas in analytical chemistry, biotechnology and food technology

The Faculty of Science at the University of Johannesburg recently introduced three advanced diplomas in Analytical Chemistry, Biotechnology and Food Technology. The successful completion of an Advanced Diploma gives access to postgraduate studies (e.g. Honours Degrees).

Entry Requirement(s): A Diploma in the relevant field (i.e. Analytical Chemistry, Biotechnology or Food Technology or an equivalent qualification).

Applications: Apply online uj.ac.za/apply, applications close on 30 September 2020 @ 12:00. For more information contact 011 559 2374/3826 or email web-science@uj.ac.za.



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New Appointments, NRF Ratings and New HoDs

Well done to all the researchers who received favorable outcomes on their NRF rating applications and to those who improved their NRF ratings. Included on this list are Prof C Sheppard, Dr BV Kheswa, Dr Andrew Craig, Prof R Greenfield, Prof H Mouri, Prof M de Kock, Prof G Hoogendoorn, Dr E Joubert and Prof R Pant.

Three of our departments warmly welcomed new Heads of Department (HoDs): Prof James Ramontja (Department of Chemical Sciences), Prof Bettine van Vuuren (Department of Zoology) and Prof Paulus Masiteng (Department of Physics). Congratulations to our new HoDs! The full list of all the departments in the Faculty of Science and the current HoDs is available on <https://bit.ly/2UH3dru>

The Faculty of Science also extended a warm welcome to new staff members, including Prof Paul Kappo (Associate Professor), Dr Daniso Beswa (Senior Lecturer), Ms. Minenhle Khoza (Lecturer) and Mr Solomon Pole (Instrument Scientist).



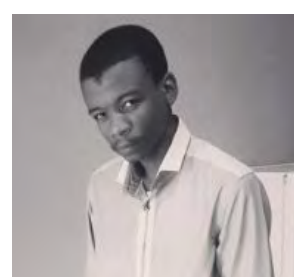
Prof Paul Kappo
(Biochemistry)



Dr Daniso Beswa
(Biotechnology & Food
Technology)



Ms Minenhle Khoza
(Biotechnology & Food
Technology)



Mr Solomon Pole
(Chemical Sciences)

Soweto Science Centre and Community Engagement

The Soweto Science Centre is the faculty's flagship community engagement (CE) initiative. The Centre started the year by hosting a successful 2020 open day for over 300 parents and learners, organised by Ms Gabolwelwe Mosina, who is serving in a monitoring capacity at the Centre until a permanent manager is appointed.

In other CE initiatives, the Department of Botany and Plant Biotechnology created a Vegetable-Box Garden with learners from the UJ Metropolitan Academy. Read more on <https://bit.ly/3hDJOL9>. The department also introduced the Westdene Recreation Centre Project, a community outreach initiative where nursery school children participate in creating a hanging Garden for their school yards. Read more on <https://bit.ly/2zImTnw>

