Science Matters

SCIENCE FACULTY NEWSLETTER

FACULTY OF SCIENCE

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Message from the Dean

DEAR COLLEAGUES AND STUDENTS

Congratulations to all staff who were promoted in the most recent ad hominem promotions cycle and those who were newly rated or re-rated by NRF. Congratulations also to all staff and students who have won awards in recognition of their substantial contributions to research, teaching, service and innovation!

Anyone who walked into the Chris Hani Building recently might notice the new faculty branding that spans physical spaces, virtual spaces and all manner of media. This is a subtle attempt to establish a clear identity as a step towards creating a sense of belonging.

Congratulations to Freedom Gumedze (STA), Phil Janney (GEO), David Erwin (MAM) and Sarah Fawcett (Deputy Dean: Transformation), whose terms as HoDs and Deputy Dean were renewed.

In the last few months work began to fill vacant posts in the faculty offices to ensure that we are able to meet the needs of the faculty effectively and efficiently in 2026.

At a strategic level, a number of working groups are developing proposals for improvements in faculty policies and processes. These groups have been hard at work engaging with topics such as: the Ad Hom promotion processes; the Earth and Environment Sciences programme design; the Admissions policies and structure; the skills needed by all Science students; student support and monitoring; and the ideal structure of the Extended Degree Programme. This is alongside the substantial work being done in numerous faculty committees.

Thanks to everyone for their contributions to the faculty!

Regards,
Hussein Suleman

GEAGTE KOLLEGA'S EN STUDENTE

Baie geluk aan alle personeel wat in die mees onlangse ad hominem-promosiesiklus bevorder is, asook dié wat nuut deur die NRF gegradeer of hergradeer is. Baie geluk ook aan al die personeel en studente wat toekennings ontvang het in erkenning van hul groot bydraes tot navorsing, onderrig, diens en innovasie!

Enigiemand wat onlangs die Chris Hani-gebou binnegegaan het, sal dalk die nuwe fakulteitsbranding opmerk wat fisiese ruimtes, virtuele ruimtes en alle vorme van media insluit. Dit is 'n subtiele poging om 'n duidelike identiteit te vestig as 'n stap na die skep van 'n gevoel van behoort.

Baie geluk aan Freedom Gumedze (STA), Phil Janney (GEO), David Erwin (MAM) en Sarah Fawcett (Adjunkdekaan: Transformasie), wie se termyne as HoDs en Adjunkdekaan hernu is.

In die afgelope paar maande is daar begin om vakant poste in die fakulteitskantore te vul om te verseker dat ons die fakulteit se behoeftes effektief en doeltreffend kan hanteer in 2026.

Op 'n strategiese vlak is daar 'n aantal werkgroepe besig om voorstelle te ontwikkel vir verbeterings in fakulteitsbeleid en -prosesse. Hierdie groepe is hard aan die werk met onderwerpe soos: die Ad Hom-promosieproses; die ontwerp van die Aarde- en Omgewingswetenskapprogram; die toelatingsbeleid en -struktuur; die vaardighede wat alle Wetenskappe-studente benodig; studentesteun en monitering; en die ideale struktuur van die Uitgebreide Graadprogram. Dit is benewens die substansiële werk wat in talle fakulteitskomitees gedoen word.

Baie dankie aan almal vir hul bydraes tot die fakulteit!

Groete,
Hussein Suleman

BOOGXA BAM ABATHANDEKAYO KUNYE NABAFUNDI

Sivuyisana nabo bonke abasebenzi abanyuselwe kowona mjikelo wamva nje wokunyuselwa kwe-ad hominem kunye nabo basandul' ukureyithwa okanye baphinde bahlelwa yi-NRF. Sivuyisana nabo bonke abasebenzi nabafundi abaphumelele iimbasa ngokuqatshelwakwegalelo labo elikhulu kuphando, ukufundisa, inkonzo kunye nokuyila izinto ezintsha!

Nabani na ongene kwiSakhiwo saseChris Hani kutshanje uyakuqaphela uphawu olutsha lwefakhalthi olugubungela iindawo ezibonakalayo, iindawo ezibonakalayo kunye nazo zonke iintlobo zemidiya. Eli lilinge elenziwe ngobuchule lokuseka ubumnini obucacileyo njengenyathelo lokudala imvakalelo yokuba yinkxalenye.

Sivuyisana noFreedom Gumedze (STA), uPhil Janney (GEO), uDavid Erwin (MAM) noSarah Fawcett (iSekela Ntloko: uTshintsho neNguqu), abamagama abo njengee-HoDs kunye neSekela Ntloko ahlaziyiweyo.

Kwiinyanga ezimbalwa ezidlulileyo umsebenzi uqalisiwe wokuzalisa izithuba ezingenabantu kwiiofisi zefakhalthi ukuqinisekisa ukuba siyakwazi ukuhlangabezana neemfuno zefakhalthi ngokufanelekileyo nangempumelelo ngo2026.

Kwinqanaba lenkquboqhinga, inani lamaqela asebenzayo aphuhlisa izindululo zokuphuculwa kwemigaqonkqubo yefakhalthi kunye neenkqubo. La maqela ebesebenza nzima esebenzisana nezihloko ezifana nezi: iinkqubo zokukhuthazwa kwe-Ad Hom; uyilo lwenkqubo yezeNzululwazi yoMhlaba nokusiNgqongileyo; imigaqonkqubo yoKwamkelwa kunye nolwakhiwo; izakhono ezifunwa ngabo bonke abafundi bezeNzululwazi; inkxaso kunye nokubeka iliso kubafundi; kunye nesiseko esifanelekileyo seNkqubo sesiDanga esongezelelweyo. Oku kuhambisana nomsebenzi omkhulu owenziwayo kwiikomiti ezininzi zefakhalthi.

Ndiyabulela kuye wonke umntu ngegalelo lenu kwifakhalthi!

Ozithobileyo,
Hussein Suleman

Featured Article

PROFESSOR JILL FARRANT WINS LIFETIME ACHIEVEMENT AWARD AT 2025 NRF AWARDS

On receiving her award for Lifetime Achievement at the 2025 National Research Foundation (NRF) Awards, Professor Jill Farrant, from the Department of Molecular and Cell Biology at the University of Cape Town, described her accolade as the biggest honour she has ever received from her country. *"I have fought for this country. I have fought for equality in race and gender, and to have it recognised is really a great honour. I can't go without acknowledging all my students, past and present and my collaborators globally and finally to the God of my understanding for showing me my path."*

Over the course of a distinguished career as a plant molecular physiologist, Prof Jill Farrant has combined scientific excellence with a deep commitment to capacity building, mentorship, and societal impact. Her life's work, aimed at the improvement of drought tolerance in African crops, has redefined our understanding of this critical field and has contributed to food security in the face of climatic changes on a continent challenged by a future that will be hotter and drier. Throughout her research, she has used a multidisciplinary systems biology approach to fully understand the fundamental mechanisms and regulation of desiccation tolerance. Her work has led to a number of important discoveries that have led to breakthroughs such as the genetic modification of maize to improve its tolerance to moderate drought conditions. Her PhD involved understanding why certain seeds are sensitive to desiccation, precluding their storage for conservation purposes.

She went on to undertake research on unique and rare plants with the ability to tolerate extreme water loss/desiccation, sometimes for months or years, termed resurrection plants. Her later research looked at these resurrection plants and the synergies with root-associated microbes, producing natural biostimulants shown to improve drought tolerance and act as soil regeneration agents. This has led to a reduction in the reliance on chemical fertilisers in degraded soils.

Along the way, she introduced research on "orphan crops", also sometimes called "forgotten crops", which have not been bred during the green revolution for increased seed size and yield, the consequences of which were a severely reduced tolerance of water loss due to drought. Such crops are thus inherently more tolerant of drought but still die under severe drought conditions. Concentrating on orphan crops of true value to food security, namely legumes, the seeds being the richest source of plant protein, and teff, a gluten free and highly nutritious cereal seed, she has investigated their natural genetic mechanisms of tolerance with the aim of improving drought tolerance in green ways without implication to, if not improvement of, seed yield. She is currently working with the Ethiopian Institute of Agriculture to develop molecular biomarkers for this trait in teff and further improve drought tolerance by integrating select genes identified from the resurrection grass and close relative of teff, Eragrostis nindensis.

Her research has also led to new discoveries in the field of cosmeceuticals, especially for the cosmetic and wound healing properties of the resurrection plant, Myrothamnus flabellifolia. In this regard, she has acted as scientific consultant in the private sector, notably for Giorgio Armani Skincare and L'Oreal Paris, and is collaborating with the University of Cape Town's Skin and Hair Clinic for its use in wound healing. Her primary aim here is not only to facilitate South African products of use to the world, but to open a new avenue for subsistence farmers with barren rocky soil to produce a desirable and marketable product that will further boost the bioeconomy of South Africa. Her work has been featured in numerous documentaries, including the BBC's The Genius Behind and PBS's H_2O the Molecule that Made Us and she has engaged in public outreach through numerous platforms which have included a TED Global Talk in 2015; BioVision in 2013; and the prestigious Falling Walls conference in Berlin. Prof Farrant has also appeared on a number of local television shows including 21 Icons South Africa, Expesso, I am Woman, Leap of Faith, and Carte Blanche.

Over the course of her career she has published more than 250 articles in appropriately placed visible and highly regarded journals as well as 18 book chapters. Prof Farrant has also served on the editorial and review boards of leading journals and has sat on the awards-granting committees of the Agropolis Foundation and The World Academy of Sciences (TWAS) and served as Jury President of the L'Oreal-UNESCO sub-Saharan African, and South Africa Women in Science Fellowship Programme for nine years.

Prof Farrant completed her Honours, Master's and PhD degrees at the University of Natal (now University of KwaZulu-Natal) where she also worked as a research Fellow. She spent a short time as a postdoctoral researcher at the USDA-NSSL in Colorado, USA before moving to UCT to take up the post of lecturer. At UCT she is currently a full professor and holds the DSTI-NRF Research Chair in Systems Biology Studies on Plant Desiccation Tolerance for Food Security under the auspices of UCT's Molecular and Cell Biology Department. She is the Chief Scientific Advisor for the Canadian Agtech company, Mother Wild Inc, which started up as a consequence of Farrant's potential applications and who are helping to bring her applied research to market.

Her work has garnered widespread recognition, winning her numerous accolades which have included the 2008 SAAB Silver Medal for Excellence in Botany; the 2010 DSTI Distinguished Woman in Science Award; the 2010 Oppenheimer Foundation Premier

Fellowship Award; the 2012 L'Oreal-UNESCO Award and Laureate of African and Arab States; the 2015 Erma Hamburger Award from the EPFL-WISH Foundation; and the 2022 Alexander von Humboldt Foundation's coveted Georg Forster Research Award for a lifetime of excellence in a developing and transitioning country. She was the first female researcher from UCT to obtain an NRF A-rating and has subsequently maintained this rating two more times.

2025 NRF Awards honoured South Africa's top researchers and scientists at a prestigious ceremony held on 07 August 2025 at the NH Johannesburg Sandton Hotel in Gauteng. This year's event was held under the theme Innovating for a Sustainable Future, reflecting the NRF's Vision 2030 of Research for a Better Society.

The annual NRF Awards recognise outstanding achievements made by individuals and teams whose excellence has significantly advanced science for the benefit of society. Their internationally competitive work is assessed for, among other things, the contribution to the field of study focusing on quality and impact. One of the objectives of the awards is to encourage the continued culture of advancing South Africa's scientific knowledge and technological innovation by rewarding those who make use of research for the advancement and betterment of humanity.

This article first appeared on the NRF website,
www.nrf.ac.za/professor-jill-farrant-wins-lifetime-achievement-at-2025-nrf-awards/

Achievements

THE NRF RATING SYSTEM IS A KEY DRIVER IN THE NRF'S AIM TO BUILD A GLOBALLY COMPETITIVE SCIENCE SYSTEM IN SOUTH AFRICA.

NRF ratings are allocated based on a researcher's recent research outputs and impact as perceived by international peer reviewers.

The Faculty of Science managed to achieve 28 Rated Researchers during the 2025 cycle.

These awards falls within the following categories:
A – Leading international researchers
B – Internationally acclaimed researchers
C – Established researchers
P – Prestigious Awards
Y – Promising young researchers

A1 Prof Igor Barashenkov
A1 Emer Prof Doug Butterworth
B1 Prof James Gain
B1 Prof Paul Groot
B1 Prof Muthama Muasya
B1 Prof Maano Ramutsindela
B1 Prof Judith Sealy
B2 Prof Rebecca Ackermann
B2 Prof Res Altwegg
B2 Emer Prof Linda Haines
B2 Prof Chris Harris
B2 Prof Timm Hoffman
B2 Dr Ivan Varzinczak
B3 Prof Phil Janney
B3 Assoc Prof Robert Thomson
C1 Prof Sheetal Silal
C1 Dr Petrus Le Roux
C1 Dr Paul Meyers
C1 Assoc Prof Deshendran Moodley
C1 Assoc Prof Geoff Nitschke
C2 Assoc Prof Samson Chimphango
C2 Dr Shajid Haque
C2 Assoc Prof Alastair Sloan
C3 Dr Roger Diamond
P Dr Jesse Heyninck
Y1 Dr Vincent Hare
Y2 Dr Miengah Abrahams
Y2 Dr Rosephine Georgina Rakotonirainy

UCT'S ZARINA PATEL INDUCTED INTO THE ACADEMY OF SCIENCE OF SOUTH AFRICA

ASSOCIATE PROFESSOR ZARINA PATEL, A LEADING SCHOLAR IN URBAN SUSTAINABILITY AND ENVIRONMENTAL GOVERNANCE AT THE UNIVERSITY OF CAPE TOWN (UCT), HAS BEEN ELECTED TO THE ACADEMY OF SCIENCE OF SOUTH AFRICA (ASSAF). SHE JOINS 45 OF THE COUNTRY'S MOST DISTINGUISHED RESEARCHERS IN THE 2025 INTAKE, WITH UCT CONTRIBUTING 20% OF THIS YEAR'S COHORT.

Assoc Prof Zarina Patel

Associate Professor Patel's induction recognises her significant scholarly contributions and commitment to using research to strengthen society. Reflecting on the milestone, she said, *"The academy has historically been a challenging space for scholars like me, who cross divides between science and social science, and who work at the interface of science and policy. Being inducted into ASSAf is an acknowledgement of the need to deploy science in conjunction with other ways of knowing in service of society."*

She added: *"I am excited by the alignment between my approach to scholarship and the academy's commitment to reconfiguring systems and structures that currently limit solutions, policy responses, and intellectual capacity development."*

A scholar of urban change and social justice

Patel's academic career spans more than three decades, reflecting her dedication to understanding how cities – particularly in the Global South – can transition toward more just, inclusive, and sustainable futures. Trained in both the sciences and the social sciences, she specialises in human geography, urban studies, and environmental governance, with a distinctive focus on African cities.

Her work is characterised by southern urban theorisation that generates knowledge rooted in African contexts rather than relying on dominant Global North frameworks. It is defined by transdisciplinary research leadership that fosters meaningful partnerships among academics, policy makers, practitioners, and communities. Additionally, her sustained engagement at the science–policy interface, through long-term city–university collaborations, has significantly influenced both local and global policy.

Expanding on the context shaping her research, Patel said: *"It is widely accepted that planetary well-being is closely tied to urban processes. Urban Africa presents complex challenges. These include delayed demographic transitions, overlaps between formal and informal delivery systems, weak governance, and high levels of inequality and unemployment, among others. These challenges, however, also create opportunities for innovation, technology leapfrogging, and context-relevant solutions."*

Evidence-based research, she emphasised, remains essential. *"My research and that of my postgraduate students has contributed to systems knowledge and evidence to inform policy areas such as climate change, energy, housing, waste, transport and risk. Understanding how these systems work is especially important in contexts where data is scarce or inconsistent. However, while knowledge and evidence are necessary, they*

are not sufficient on their own. The 'how' of engaging in partnerships to diversify knowledge, and recognising the value of different expertise, is a cornerstone of my methodological approach."

Advancing knowledge through collaboration

ASSAf membership recognises both research excellence and scholarly contributions that strengthen society. Patel exemplifies these ideals through her training of over 100 early-career African researchers in transdisciplinary methods, her leadership of multi-country collaborations, and her central role in pioneering city–university partnerships in Cape Town and Durban.

She also contributes to editorial boards, scientific committees and international councils focused on sustainable development and urban futures. Her scholarly output is substantial, with over 1 660 citations and an H-index of 20. Many of her publications such as her widely cited 2025 article on African universities and urban transitions are co-authored with practitioners, underscoring her commitment to bridging research and real-world impact.

Patel's academic citizenship is equally influential. She serves as president of the Society of South African Geographers; chair of the South African Commission of the International Geographers Union; and trustee of the Urban Studies Foundation, where she leads the Urban Urgencies grant scheme. She has also contributed to global platforms such as the World Economic Forum's Global Futures Council on Cities and Urbanisation.

"In each of these roles, I work to shift long-standing power dynamics in global knowledge production," she said. *"This includes creating space for African scholarship, amplifying early-career researchers, and advocating for academic systems that value diverse forms of expertise."*

A well-deserved honour

Election to ASSAf is one of the highest accolades a South African scholar can receive. Members are nominated and elected by their peers through a rigorous and competitive process that recognises exceptional scientific achievement and meaningful societal contribution.

Patel's induction affirms her status as a leading voice in reimagining how science can address the interlinked crises of the 21st century, such as climate change, inequality, urban vulnerability, and ecological decline.

"My ambition as a member of ASSAf is to harness opportunities for leveraging the systems changes needed to break down the barriers that serve to undervalue southern science by finding opportunities to support, amplify and disseminate scholarship from and for Africa and the Global South," she concluded.

EVOLUTIONARY ECOLOGIST ENTERS PRESTIGIOUS ROYAL SOCIETY FELLOWSHIP FOLD

ADDING TO A COHORT OF EXCELLENT RESEARCHERS IS THE UNIVERSITY OF CAPE TOWN'S (UCT) PROFESSOR CLAIRE SPOTTISWOODE. SHE IS ONE OF OVER 90 OUTSTANDING RESEARCHERS FROM ACROSS THE WORLD WHO HAVE BEEN ELECTED THIS YEAR TO THE FELLOWSHIP OF THE ROYAL SOCIETY, THE UNITED KINGDOM'S NATIONAL ACADEMY OF SCIENCES. THIS ESTEEMED GROUP INCLUDES TRAILBLAZERS ACROSS A WIDE RANGE OF FIELDS. THEIR ACHIEVEMENTS REPRESENT THE VERY BEST OF SCIENTIFIC ENDEAVOUR, FROM BASIC DISCOVERY TO RESEARCH WITH REAL-WORLD IMPACT.

The strength of the fellowship lies not only in individual excellence but also in the diversity of backgrounds, perspectives and experiences each new member brings, representing the truly global nature of modern science. This year's cohort includes fellows elected from countries such as South Africa, China, Switzerland, Singapore and Malaysia.

Prof Claire Spottiswoode

Among the distinguished individuals welcomed into the fellowship is Professor Spottiswoode, based at UCT's Faculty of Science. She is a South African evolutionary ecologist studying birds in Africa and joins five fellows of the Royal Society from UCT.

"My work, together with my colleagues, focuses on the ecology and evolution of interspecies interactions such as parasitism, predation and mutualism. When species interact and evolve in response to one another – that's to say, coevolve – the result can be rapid and ever-shifting evolution, shaping some of the most beautiful adaptations seen in nature," explained Spottiswoode.

"I study some of these interactions through fieldwork on African birds together with many wonderful students and other collaborators from Africa and around the world. I'm bowled over by the Royal Society's recognition for research that's been a delight to do."

At UCT, Spottiswoode is the Pola Pasvolsky Chair in Conservation Biology at the FitzPatrick Institute of African Ornithology in the Department of Biological Sciences and co-director of the Max Planck–University of Cape Town Centre for Behaviour and Coevolution. The FitzPatrick Institute is one of UCT's oldest University Research Committee-accredited research groupings, part of the Department of Biological Sciences (then Zoology) since 1973. Spottiswoode is one of two National Research Foundation A-rated researchers based there.

Institute director, Associate Professor Susie Cunningham, said: *"We are absolutely delighted that Claire has been recognised in this way – this honour is incredibly well-deserved. Claire is beloved in our institute not just for the world-leading quality of her work, but also for her kind, collegial and inclusive attitude and her dedicated mentorship of her students and junior colleagues. She's a superb scientist and role model and we're proud to have her as our colleague at the Fitz."*

Evolutionary interactions between species

Spottiswoode's research asks how interactions between different species influence the evolution of both genetic and cultural biodiversity. Her work is strongly rooted in field observations and experiments, carried out in close and long-term collaboration with communities in southern Zambia and northern Mozambique, in particular.

Yao honey-hunter Seliano Rucunua holding male honeyguide caught for research in Niassa Special Reserve, Mozambique.

"Research is always a team effort and this big honour is also recognition for the many people who shared in this work, including the communities in Zambia, Mozambique and South Africa who make all our findings together possible – and immensely enjoyable. If I have learnt anything these last couple of decades, it is that science truly does thrive on diversity and needs more than just scientists."

Her research covers the ecology and evolution of both antagonism and mutualism – how and

why species exploit or cooperate with other species.

Coevolutionary arms between brood parasites and their hosts

For over two decades she has studied coevolution between brood-parasitic birds and the hosts they exploit to raise their young. Many brood-parasitic birds beautifully mimic the eggs of their hosts, to trick host parents into accepting the imposter egg as one of their own. Spottiswoode's work in the field in Zambia has shown how such coevolutionary arms races can escalate to drive signals of identity encoded in beautiful and diverse markings on eggshells.

Egg signatures and forgeries, in Zambia – tawny-flanked prinia (host) in outer circle, cuckoo finch (parasite) in middle circle.

Hosts try to escape mimicry by evolving new egg types (signatures) but are constantly pursued by reciprocal evolution of egg markings in the parasite (forgeries). Together with collaborators, she has also shown how, in turn, selection for egg mimicry has shaped ancient genetic diversification only among females within parasite species that exploit multiple hosts.

Cooperation between people and wild birds

In addition to parasitism, she is fascinated by mutualistic interactions, in which both interacting species benefit. *"Evolution has shaped a world as rich with mutual benefit as it is with exploitation,"* said Spottiswoode.

She and her team study the remarkable mutualism between human honey-hunters and Greater Honeyguides in Mozambique and elsewhere in eastern Africa. This cooperative relationship involves beeswax-eating birds leading people to wild bees' nests so they can subdue the bees and open the nest, exposing beeswax for the honeyguides and honey for the humans.

"People have been following honeyguides for probably at least as long as we've been human. It's a joy to study this rare example of cooperation between our own species and a free-living wild animal, as a window into the evolution of mutualism and communication between species," she said.

The team's work has helped demonstrate that honeyguides know the local human community's specific honey-hunting signals that vary culturally across Africa, benefitting both species. It has also shown how interspecies cooperation both affects and is affected by ecology and culture. This research is conducted in close collaboration with honey-hunting communities and conservation organisations, particularly the Niassa Carnivore Project.

Speaking to recognition she said: *"This feels particularly poignant right now, as our honey-hunter and conservationist collaborators and friends in Mozambique are imperilled by armed attacks in the Niassa Special Reserve – an extraordinary place where cooperation between honeyguides and people still flourishes."*

Through this work she has received several awards including the Scientific Medal of the Zoological Society of London, the Bessel Research Award of the Alexander von Humboldt Foundation, and the Gill Memorial Medal of BirdLife South Africa. Her election to the Fellowship of the Royal Society acknowledges her significant contributions to understanding complex ecological and evolutionary interactions.

PROF MEYER HONOURED WITH 2025 SAICSIT PIONEER AWARD

Prof Tommie Meyer

Prof Tommie Meyer was honoured with the 2025 SAICSIT Pioneer award at the organisation's 46th Annual conference that was held in Umhlanga from July 17th to 18th, 2025.

Founded in 1982, the South African Institute for Computer Scientists and Information Technologists (SAICSIT) aims to further the study and application of computer science.

A professor of Computer Science at the University of Cape Town, holder of the DSTI/NRF-UCT Co-funded Research Chair in Symbolic Artificial Intelligence, the Deputy Director of the Artificial Intelligence Research Unit (AIRU), and the Co-Director of the Centre for Artificial Intelligence Research (CAIR), Meyer is recognised internationally as an expert in Knowledge Representation and Reasoning. He is one of only three South African Computer Scientists to have obtained an A-rating from the South African National Research Foundation.

He is also an editorial board member of the Journal of Artificial Intelligence Research, a member of the Advisory board of KR Conference series, and a past chair of the International Non-Monotonic Reasoning Workshop series. He has played leadership roles in numerous conferences and workshops related to KR and AI, including all the major conferences and workshops in his area of expertise. This includes being a program committee member, senior program committee member, area chair and program chair. He was instrumental in helping to set up the Southern African Conference for Artificial Intelligence Research (SACAIR). In 2024 he founded the Cape-KR symposium series with the aim of bringing the world's top KR researchers to South Africa.

One of the main drivers nationally of the research agenda for AI, Meyer was approached by the African Panel on Emerging Technologies (APET) of NEPAD (now known as AUDA) in the African Union in 2017 to present an invited presentation on the question of AI in the African context. His presentation in Accra led to the decision to commission an APET report on AI as an emerging technology, to be presented to the African Union parliament. He regularly appears in the media and presents webinars and public talks as a recognised expert on AI.

He is the (co-)author of more than 200 peer-reviewed research outputs (journal papers, book chapters, and papers in conference and workshop proceedings). He has overseen 7 postdoctoral fellowships and supervised 7 PhD students and 20 Master's students to completion. He is currently supervising 6 PhD students and 9 Master's students.

ACCLAIMED ACADEMICS CELEBRATED

ACADEMIC AGENCY WAS ONCE AGAIN CELEBRATED ON WEDNESDAY, 17 SEPTEMBER, AS THE 2025 COLLEGE OF FELLOWS TOOK CENTRE STAGE AT THE UNIVERSITY OF CAPE TOWN (UCT). THREE COLLEGE OF FELLOWS' YOUNG RESEARCHER AWARD RECIPIENTS FOR 2025 WERE ALSO RECOGNISED.

UCT celebrated three new inductees who entered the College of Fellows, as well as three recipients of the College of Fellows Young Researchers award.

The individuals are nominated for the prestigious fellowship based on their significant contributions to research in their respective fields. Induction into the UCT College of Fellows is one of the highest accolades an academic staff member can receive.

The three College of Fellows for 2025 are:

- Professor Jeff Murugan – the Department of Mathematics and Applied Mathematics
- Professor Jaco Barnard-Naudé – Director: Research, Faculty of Law
- Professor Andy Buffler – the Department of Physics.

The evening got off to a vibrant start. Acting deputy vice-chancellor (DVC) for Research and Internationalisation, Professor Murugan, hosted the evening, all the while introducing himself to accept his award, with him invoking a quote by Elon Musk: *"I am wearing so many hats; even my hat has a hat."*

For their acceptance speeches, the three College of Fellows were given an unorthodox task: describe your scholarly and life journey, in an entertaining manner, as a garden or a sporting discipline, or as a well-known song, in not more than three to five minutes.

Murugan used climbing to share his lessons, and there is half a dozen of them. *"The first lesson is gravity matters. The second is that everyone needs a good belayer. And it's more than just a person holding the other end of the rope – it's the person who tells you where the route is going and encourages you,"* he said.

Home institution

"Much of science is about connecting dots." That is lesson three. *"The journey is important, and the way a climb works is you focus on little sections at a time to get to the top."* Lesson four is to take the lead when you can. *"I like leading, and that's because I feel like I do silly things when I second, which I wouldn't do if I was leading."* The penultimate lesson is about balance, and, finally, when in doubt, run it out: *"Climbing has taught me about taking calculated risks, but risks nonetheless,"* he said.

Professor Buffler went left field with his acceptance, using a beagle as a metaphor to describe his scholarly work. He powered images on the projector with different reactions of his beagles to tell a story which had the audience laughing. *"In many ways, my scholarly work, like a beagle, is about curiosity and some confusion. It also becomes very exhausting, and there's a lot of travelling involved. However, as we all know, home is best. We travel as*

scholars and then return, and we recognise that UCT is the best place to operate from."

He added: *"In the end, loyalty to UCT is what matters and that's what unifies us as a community and we recognise that with all the complexities around our lives, we come back here. So, thank you for your confidence in me. I am highly grateful for this award, and I thank the university for the life it has given me."*

In his welcome address, Vice-Chancellor Professor Mosa Moshabela said celebrating academics in this way was important. *"We live in a time where there are constant attacks on universities, academia and science, and we have to work even harder to protect the integrity of excellence."*

UCT'S ACADEMIC EXCELLENCE CELEBRATED AT THE NRF AWARDS

THE NATIONAL RESEARCH FOUNDATION (NRF) AWARDS ARE AN ANNUAL CELEBRATION OF THE COUNTRY'S TOP RESEARCHERS, SCIENTISTS AND RESEARCH TEAMS, THAT ACKNOWLEDGE THEIR EFFORTS TO ADVANCE KNOWLEDGE AND HELP SOCIETY ADDRESS AND OVERCOME CHALLENGES THROUGH RESEARCH. SEVERAL LEADING UNIVERSITY OF CAPE TOWN (UCT) RESEARCHERS RECEIVED RECOGNITION AT THE PRESTIGIOUS CEREMONY ON 7 AUGUST 2025.

This year's awards event was held under the theme Innovating for a Sustainable Future. Notably, this aligns with UCT's Vision 2030, as underpinned by the three pillars of excellence, transformation and sustainability at the core of the University's strategy. *"This year's awards are again a testament to the first-rate research conducted at UCT,"* said Acting Deputy Vice-Chancellor for Research and Internationalisation, Professor Jeff Murugan.

UCT researchers proudly celebrate their success at the NRF Awards, where they were recognised for their outstanding research, innovation and impact.

"Guided by our Vision 2030, our research portfolio challenges all of us at the university to build on our globally recognised expertise in the natural, health and social sciences, to produce research that answers the complex problems of today and tomorrow".

UCT Vice-Chancellor, Professor Mosa Moshabela, in his role as Chairperson of the NRF Board, offered welcome remarks at the event that highlighted the awards as a recognition of both individual excellence and the collective power of science to transform society. *"These awards recognise not only personal achievements, but also the role that science, technology and innovation play in shaping a more just, inclusive and sustainable future in this country, on the continent and in the world,"* he said.

The achievements of the UCT awards winners exemplify the university's commitment to driving scientific excellence. *"Our scientific pursuits not only advance knowledge but also deeply impact societal change, sustainability and the lives of people in South Africa and beyond,"* Prof Murugan said. *"This is made possible through the hard work, innovation and dedication of UCT academics, researchers and the incredible support staff at the university."*

The NRF awards are presented across two categories: Special Awards and the NRF Ratings-

Prof Mosa Moshabela, UCT Vice-Chancellor and Chairperson of the NRF Board.

based Awards. UCT's research strength and excellence were prominently displayed as two researchers and one postgraduate student received special recognition awards in the following categories:

Lifetime Achievement Award

This award recognises extraordinary contributions of international standard and impact to the development of science over an extended period of time.

Professor Jill Farrant, who holds the SARChI Chair in Plant Desiccation Tolerance and is based in UCT's Department of Molecular and Cell Biology, is an internationally acclaimed plant molecular physiologist. As the world's leading expert on resurrection plants, her work has positioned South Africa at the forefront of climate-adaptive agricultural science. Her transformative contribution to the field has far-reaching implications for global food security and climate resilience.

Prof Farrant has spent a lifetime of research aimed at improving drought tolerance in crops of African value. In so doing, she is contributing towards food security in a hotter, drier future. The implications of her research extend far beyond the continent however, informing global efforts to develop climate-resilient crops.

"I'm proud that my work is redefining our understanding of drought tolerance in plants," she said. *"It's really important to contribute to international knowledge systems while simultaneously positioning South Africa as a hub for cutting-edge plant stress biology research."*

Over the course of her distinguished career, Farrant has combined scientific excellence with a deep commitment to leadership, capacity building, cross-border collaborations, mentorship and societal impact. Her work exemplifies the global relevance of South African science and innovation that the NRF Lifetime Achievement Award seeks to honour.

Research Excellence Award for Early Career/Emerging Researchers

This award recognises outstanding research performance by current early career/emerging researchers.

Dr Itumeleng Monageng an astrophysicist currently holding a joint position as a Senior Lecturer in the Department of Astronomy at UCT and the South African Astronomical Observatory (NRF-SAAO). His work is critically important on both national and international levels, tackling some of the most intriguing questions in various subfields of astrophysical transients.

Dr Monageng conducts research on interacting binary stars, where he uses data from telescopes to understand the physical processes taking place in these systems. he has played a vital role in designing and coordinating observational campaigns using multiwavelength facilities such as SALT and MeerKAT.

Monageng's research has advanced our understanding of energetic astronomical events, particularly advancing key areas of research in high-mass X-ray binaries through innovative data analysis techniques. By employing innovative observational strategies and sophisticated data analysis techniques, Monageng has enhanced our knowledge of complex physical mechanisms that were previously oversimplified.

He is also committed to student supervision and outreach, mentoring and supervising students and early-career researchers with exceptional dedication. *"I'm proud of my contribution to capacity building and human capital development,"* he said. *"I believe it is really important to foster the development of the next generation of scientists and prioritise promoting diversity in astronomy by supervising students from underrepresented groups."*

NRF ratings-based awards

The Ratings-based awards are centred on a peer review system that looks at the research impact of the nominee over an eight-year period.

A-ratings are given to researchers who are unequivocally recognised by their peers as leading international scholars in their field. The quality and impact of their research are evaluated through the NRF's peer-review rating system.

Second rating

- Professor Kelly Chibale

Fifth rating

- Professor Igor Barashenkov
- Professor Douglas Butterworth

P-ratings are assigned to researchers considered likely to become future international leaders in their respective fields based on their demonstration of exceptional potential. Usually under the age of 35, these are researchers who have held a doctorate of equivalent qualification for less than five years.

- Dr Jesse Heynick

UCT CLIMATE SCIENTIST ON 2025 FORBES SUSTAINABILITY LEADERS LIST

DR ROMARIC C ODOULAMI, A RESEARCHER WITH THE AFRICAN CLIMATE AND DEVELOPMENT INITIATIVE (ACDI) AT THE UNIVERSITY OF CAPE TOWN (UCT), HAS BEEN NAMED AMONG THE 2025 FORBES SUSTAINABILITY LEADERS. THE ANNUAL LIST PROFILES 50 PEOPLE AROUND THE WORLD WHO ARE DRIVING PRACTICAL AND INFLUENTIAL RESPONSES TO THE CLIMATE CRISIS.

Dr Romaric C Odoulami

This recognition comes at a moment when the consequences of climate change are becoming increasingly stark: from severe heatwaves to rising sea levels. While political uncertainty and misinformation continue to slow progress in some quarters, researchers, entrepreneurs, and community leaders are developing solutions that are already reshaping economies and societies.

Dr Odoulami, who was born in Benin, specialises in climate intervention research, focusing on the complex and highly controversial field of solar radiation modification (SRM). He leads a continent-wide team of scientists assessing how SRM techniques – such as reflecting a small portion of sunlight back into space – could

influence Africa's weather and climate systems. This initiative is the most extensive of its kind in the Global South.

His research, supported by the Simons Foundation International, uses computer models to investigate both the potential cooling benefits and the risks, such as possible disruption to rainfall patterns that could undermine food security in many parts of the world.

"Africa is facing the harshest consequences of global warming despite the continent's insignificant contribution to it. It is, therefore, crucial for Africa, together with the rest of the Global South, to lead the global debate on any climate intervention techniques. And this can't be possible without research," explained Odoulami.

Strengthening research collaboration and African leadership

Beyond his scientific work, Odoulami is committed to building African capacity in climate research. In May 2025, he joined the African Climate Intervention Research Hub (ACIRH), a collaborative platform that brings together researchers to share expertise and strengthen the continent's voice in global climate discussions.

"The ACIRH aims to establish a community of African SRM experts who can confidently voice Africa's perspectives in the global SRM arena. And this can only be achieved through research and capacity building, as well as the training of the next generation of African climate scientists. I'm humbled to contribute to this initiative, led by my colleague, Dr Chris Lennard from UCT," Odoulami said.

Being named to the Forbes list highlights both Odoulami's individual contribution and the broader importance of African-led climate science. His work demonstrates how research carried out on the continent can inform global debates on climate interventions while ensuring African priorities remain central to the conversation.

"Being listed by Forbes as a sustainable leader reflects not only my personal achievement, but the collective efforts of colleagues and collaborators who are working tirelessly to ensure that African perspectives are well represented in the global climate intervention discourse."

PROF MEYER ELECTED A TWAS FELLOW

Prof Tommie Meyer

Prof Tommie Meyer has been elected as a Fellow of The World Academy of Sciences (TWAS) in recognition of his outstanding contribution to science and its promotion in the developing world.

Based in Trieste, Italy, TWAS was founded in 1982 and supports sustainable prosperity through research, education, policy and diplomacy. Originally known as the Third World Academy of Sciences, the academy now has more than 1400 elected fellows worldwide.

Tommie is a professor of Computer Science at the University of Cape Town, holder of the DSTI/NRF-UCT Co-funded Research Chair in Symbolic Artificial Intelligence, the Deputy Director of the Artificial Intelligence Research Unit, and the Co-Director of the Centre for Artificial Intelligence Research. He is recognised internationally as an expert in Knowledge

Representation and Reasoning, and is one of only three South African Computer Scientists to have obtained an A-rating from the South African National Research Foundation.

He is an editorial board member of the Journal of Artificial Intelligence Research, a member of the advisory board of the KR Conference series, and a past chair of the International Non-Monotonic Reasoning Workshop series. He has played leadership roles in numerous conferences and workshops related to Knowledge Representation and Reasoning and Artificial Intelligence, and is the author of more than 200 peer-reviewed research outputs.

WCRP ACADEMY VOTES FRANCK GHOMSI AS SCIENTIST OF THE MONTH

Franck Ghomsi

Franck Ghomsi is a physical oceanographer and geophysicist passionate about sea-level variability and extreme events, with a strong commitment to protecting coastal communities and both terrestrial and marine ecosystems from the impacts of climate change, especially in Africa. He holds dual PhDs in Oceanography from the University of Cape Town and Geophysics & Geodynamics from the University of Yaoundé I, complemented by MSc degrees in both fields. As a Postdoctoral Fellow at the University of Cape Town and the Centre for Earth Observation Science at the University of Manitoba, and a Research Officer at Cameroon's National Institute of Cartography, Franck blends rigorous research with practical solutions for coastal resilience. His work on sea-level variability, ocean–climate interactions, and geodynamic processes has yielded over 45 publications. He also serves as an Early Career Scientist (ECS) Representative for the International Association of Geodesy (IAG) and an Early Career Researcher (ECR) Representative for the Inter-Commission Committee on Geodesy for Climate Research.

A highlight of Franck's career is an interactive, high-resolution flooding model of sea-level rise scenarios impacting populations and potential land loss in the Gulf of Guinea, Africa's most densely populated coastal region, spanning from Guinea-Bissau to Gabon, from 1993 to 2100. this tool stems from his recent peer-reviewed study in Nature Scientific Reports. It reveals sea levels rising twice as fast as predicted, threatening over two million people with displacement by 2050 in a region with minimal adaptation infrastructure and among the lowest GDPs globally. Built using a combination of satellite altimetry products, tide gauge data, up to date world population data and CMIP6 multi-model ensemble simulations, the model supports planning for effective adaptation and has been showcased in scientific panels and featured in outlets like Radio-Canada.

In parallel with these data-driven contributions, Franck has also engaged in advancing climate knowledge through collaborative science and advocacy. As part of a team of early and mid-career researchers (EMCRs), he co-authored a perspective paper published in Frontiers in Climate. The work emerged from the EMCR Symposium at the 2023 WCRP Open Science Conference and articulates pathways to enhance the usability of local-scale climate information, bridge research gaps in the Global South, and strengthen EMCR contributions to policy-making.

This article first appeared on the Nansen-Tutu Centre website,
https://www.nansen-tutu.uct.ac.za/wcrp-academy-votes-franck-ghomsi-as-scientist-of-the-month/

Faculty News

FACULTY OF SCIENCE CELEBRATES GROWTH OF TRANSFORMATIVE STUDENT RESEARCH ASSISTANTSHIP PROGRAMME

THE UNIVERSITY OF CAPE TOWN'S (UCT) FACULTY OF SCIENCE HELD AN EVENT ON TUESDAY, 28 OCTOBER 2025, TO CELEBRATE THE CONTINUED SUCCESS AND EXPANSION OF ITS STUDENT RESEARCH ASSISTANTSHIP PROGRAMME, AN INITIATIVE SPEARHEADED BY THE FACULTY'S TRANSFORMATION COMMITTEE AND DESIGNED TO INTRODUCE UNDERGRADUATE STUDENTS FROM DESIGNATED EQUITY GROUPS TO THE WORLD OF ACADEMIC RESEARCH.

Welcoming participants to the event, Associate Professor Sarah Fawcett, Deputy Dean for Transformation and Chair of the Transformation Committee, highlighted how the programme has grown significantly since its inception. *"This initiative was piloted last year with 20 student research assistants and we were able to make 41 awards this year, a testament to the growing enthusiasm from both students and supervisors,"* said Associate Professor Fawcett.

The assistantship programme, developed under the guidance of the Faculty Transformation Committee, aims to give students first-hand experience of what it means to do research and to work within an academic setting. *"You may discover that you love it, or that it's not for you,"* Fawcett noted. *"Either way, you'll have gained valuable insight into the research process and a more informed perspective to take with you."*

Fawcett extended special thanks to Dr Anna Taylor and Stephan Jamieson, who have both been deeply involved in the programme's conceptualisation and coordination. *"I couldn't have done this alone,"* she said. *"Anna and Stephan have been instrumental in shaping and running this initiative."*

Reflecting on the event, Dr Taylor said, *"The event was a wonderful opportunity to meet and celebrate the students and supervisors working across many departments of UCT's Science Faculty to make the research enterprise more diverse and inclusive. The programme provides such a valuable opportunity for those students interested in possibly pursuing a career in research or academia to learn first-hand what the work entails in a practical sense."*

Following Fawcett's address, Professor Hussein Suleman, Dean of the Faculty of Science, spoke about the faculty's broader vision for the programme. *"Research is at the heart of who we are as a Faculty of Science,"* he said. *"While we teach, we do so from a foundation of research. The goal of this programme is to open doors, to expose students to possibilities they might not have imagined."*

Reflecting on South Africa's past, Professor Suleman emphasised the importance of creating opportunities that were once denied to many. *"Apartheid did many terrible things but one of the worst was that it denied people opportunities,"* he said. *"This programme is meant to be the opposite of that. We want to give students access to opportunities and see what happens. Our hope is that this spark will inspire many of you to pursue postgraduate studies or research careers, whether inside or outside academia."*

The Dean concluded by reaffirming the faculty's commitment to expanding the programme. *"If more students want to participate, we will make a plan,"* he said. *"We want to give as many people as possible the chance to explore research."*

UCT HIGHLIGHTS RIGHTS AND CLIMATE JUSTICE GLOBALLY

THE UNIVERSITY OF CAPE TOWN (UCT), THROUGH THE AFRICAN CLIMATE AND DEVELOPMENT INITIATIVE (ACDI), PARTICIPATED IN THE RIGHT HERE, RIGHT NOW GLOBAL CLIMATE SUMMIT ON 5 JUNE. THIS GLOBAL 24-HOUR EVENT BROUGHT TOGETHER INSTITUTIONS FROM ACROSS THE WORLD TO ADDRESS THE INTERSECTION OF CLIMATE CHANGE AND HUMAN RIGHTS.

UCT's two-hour session, *"Championing human rights-based research and teaching towards climate justice in Africa"*, offered a regional lens on the disproportionate climate burdens facing the continent and the role of higher education institutions in contributing to equitable climate action.

"It's essential for human survival in the climate crisis to make the connection between human rights and climate change explicit. It is important to understand human vulnerabilities and protect livelihoods accordingly. This form of event creates a visible dynamic globally that leads to important next steps," said Britta Rennkamp, senior researcher at ACDI.

Hosted by the United Nations Human Rights (UNHR) and the University of Oxford, the event was convened by the International Universities Climate Alliance (IUCA).

Framing climate justice from an African perspective

The session opened with a framing discussion on the relevance of human rights in African climate governance, after an insightful opening from UCT Vice-Chancellor (VC) Professor Mosa Moshabela. Presenters highlighted the global inequities in emissions and impacts, noting that while Africa contributes relatively little to global greenhouse gas emissions, the continent faces outsized climate risks. South Africa, as a moderate-to-high emitter, was identified as a unique outlier in the region.

Speakers emphasised that climate burdens are not evenly distributed, and the causes of the crisis are not equally shared. They discussed how international mechanisms, such as the Paris Agreement and UNFCCC, have incorporated human rights language. However, gaps remain in how these rights are implemented and recognised at regional and local levels. African courts are increasingly engaging with climate justice arguments, but progress is uneven.

Speakers with UCT's VC at the RHRN Global Summit at UCT.

"Without human rights-based research and teaching on the causes and impacts of climate change in Africa, there is a danger that climate solutions will not incorporate human rights-based solutions that are available in Africa. These solutions are often distinct from those available in other parts of the world, since the ways in which our legal systems protect and promote human rights are distinct," explained Associate Professor Melanie Murcott from UCT's Institute of Marine and Environmental Law.

The session underscored the opportunity and responsibility for African universities to drive research and teaching that foreground justice, equity, and context-specific solutions on the continent.

Researching human rights-based climate action

There were two panels, with the first one focusing on how human rights-based research can support more just and equitable climate action. Amber Abrams (Future Water Institute), Ruth Magreta (Lilongwe University of Agriculture and Natural Resources, Malawi), Benyam Dawit Mezmur (Professor of Law, University of the Western Cape) and Nadia Sitas (SouthSouthNorth) shared their work, ranging from water and biodiversity governance to children's rights, gender justice, and community-led adaptation.

Discussions highlighted the dangers of siloed approaches and overly technocratic solutions. There was a strong call for more integrated, interdisciplinary methods that centre lived experience and local knowledge.

"University funding for research groups is essential to help support continued research in this field. It is clear that as researchers in Africa, we are already thinking about equity, justice and human rights; we must work collaboratively to maximise our funding," stated Abrams.

The panel also explored the risks of failing to embed gender justice within broader climate work. While women are often portrayed as vulnerable, they are also innovators, and central to community-based solutions. Invisible labour – including caregiving roles – often shapes women's participation in climate responses, and must be recognised in research design.

Teaching for transformation

The second panel explored how human rights perspectives are being integrated into climate change curricula in African universities. Lesley Green (Earth Politics and Director of Environmental Humanities), Melandri Steenkamp (Global Environmental Law Centre, University of the Western Cape) and Melanie Murcott reflected on the philosophical, ethical and practical dimensions of teaching climate justice.

The discussion included critiques of technocentric and economic approaches to climate education, noting that these often reduce human rights to compliance checklists. There was a call for teaching models that foster critical reflection on the root causes of climate and social injustice, and that move beyond Western epistemologies.

Panellists noted that while new technologies are essential, the mindsets and institutional logics that underpin them often remain unchanged. Educators must equip students to challenge outdated paradigms and think relationally, recognising that human well-being is inseparable from the health of the planet.

Speakers and panellists during the RHRN Global Summit at UCT.

A global call to action

Partnering with the global summit allowed UCT and ACDI to bring African perspectives to a worldwide conversation, highlighting the urgent need to address climate change as a human rights issue.

"This type of event promotes access to knowledge about harms arising from the causes and impacts of climate change. Insights from Africa position people who are particularly vulnerable as agents of change, rather than passive victims," said Murcott. *"These insights also highlight how people in Africa experience climate impacts disproportionately, despite being among those least responsible for the activities that are driving global warming. Knowledge justice (epistemic justice) can help tackle the underlying causes of climate change, which include a lack of recognition of the intrinsic value, experiences and knowledge of people in the Global South, and exclusionary decision-making that does not take this value, knowledge and experience into account."*

Looking ahead, UCT aims to deepen its partnerships across the continent and beyond, continue integrating justice-oriented approaches into its curricula, and support a new generation of scholars and practitioners committed to equitable climate action.

REVOLUTIONISING UNDERSTANDING OF THE COSMOS

ASTRONOMERS FROM THE UNIVERSITY OF CAPE TOWN (UCT) JOINED GLOBAL CELEBRATIONS TO MARK THE FIRST LIGHT IMAGES OF THE LEGACY SURVEY OF SPACE AND TIME (LSST) ON MONDAY, 23 JUNE – ANOTHER COMPELLING COLLABORATION THE UNIVERSITY FINDS ITSELF AT THE HEART OF.

It is a project of the Vera C Rubin Observatory, a brand-new astronomy and astrophysics facility under construction on Cerro Pachón in Chile.

PhD students in astronomy (from left) Daniel Egbo, Anke van Dyk and Kyle Solomons.

This undertaking, which will launch later in 2025 and run for the next decade, is set to revolutionise our understanding of the cosmos. In 10 years, the observatory will generate about 60 petabytes, more data than everything that's ever been written in any language in human history. The Square Kilometre Array (SKA), a radio telescope under construction in South Africa and Australia, will produce more data than this.

"One of the things we will be able to study is how galaxies form. We have theories; we understand that they are formed by smaller galaxies merging, but we can only observe the small galaxies now that are close to us," said Professor Patricia Whitelock from UCT's Department of Astronomy and the South African Astronomical Observatory (SAAO), who is the manager of the South African LSST project. *"We will now be able to observe small galaxies millions of years ago as they were in earlier stages of the universe. We don't understand dark energy and dark matter; we know most of the universe is made up of things we cannot see. The overall data from Rubin is going to produce vast amounts of opportunities for studying dark energy and dark matter."*

The 8.4 m Simonyi Survey Telescope at the Vera C Rubin Observatory, equipped with the LSST camera – the largest digital camera ever built – will take detailed images of the Southern Hemisphere sky for 10 years, covering the entire

sky every few nights and creating an ultra-wide, ultra-high-definition, time-lapse record – the largest astronomical movie of all time. This unique movie will bring the night sky to life, yielding a treasure trove of discoveries: asteroids and comets, pulsating stars and supernova explosions.

Ten South African scientists, including those from UCT, and their teams will have access to LSST data, enabling groundbreaking research on topics ranging from the origins of the universe to galaxy evolution and the mechanisms behind stellar explosions. South Africa's award of 10 LSST principal investigator positions and their junior associates, who enjoy the same data access privileges as their counterparts in the United States and Chile, is the result of significant contributions by South African institutions to the Vera C Rubin Observatory collaboration.

Professor Whitelock added: *"The students are excited about this. I'm a retired astronomer, but for me the universe is incredibly beautiful and the opportunity to explore it is the greatest opportunity anyone could have. And it is so important that we in Africa are participating in this exploration of the universe. With millions of sources per night, there will be enough for everybody to do something interesting and it's a matter of finding what you are good at and what you are interested in. To students, I say: join the exploration. You are going to have fun. And you are going to contribute to science and to Africa. I'm looking forward to young people joining the programme and doing things we haven't even dreamt of."*

PhD students in the astronomy department are enthused about the world of possibilities that await. Anke van Dyk said the next 10 years of the project would see a bringing together of numerous skillsets. *"We will have to use modern techniques of artificial intelligence (AI) and machine learning to look and sift through the data to find interesting objects. I'm also interested in wide dwarf spinners, and trying to identify those can be tricky, but with a long time span, we can add all the data together to be able to give us information about finding those types of objects. It's exciting that South Africa is a world player in this type of science."*

Danile Egbo, whose work centres around radio stars, said: *"Part of my research has been discovery, and where it meets LSST is that in my case, I have multiple objects which fall within the transient and variable stars. LSST is going to help, in real-time, to detect new objects and do follow-ups. LSST leads to more discoveries and with that we can liaise it with the archival data that we have and do continuous follow-ups with instruments."*

Good pressure

Kyle Solomons works around star systems called Xray binaries, and the systems are known to undergo outbursts where they become extremely bright. *"LSST will assist in terms of me catching them right at the beginning when they become super bright and then follow up with the Southern African Large Telescope (SALT) where we do spectroscopic analysis. It's good pressure to be part of this. It solidifies us as African scientists as active and intellectual partners and that's a good thing. The unmatched depth of LSST will allow us to see even faint events even faster than before, opening new discoveries."*

LSST project in numbers:

- 4 m: primary mirror diameter
- 3 nights: time needed for an all-sky imaging
- 15 seconds: exposure time needed to capture an image
- 37 billion: number of celestial objects detected after 10 years
- 15 TB: amount of data collected every night
- 800: number of times the same object will be captured
- 23 F/D: telescope aperture
- 3 200 megapixels: resolution of telescope camera.

UCT CHEMISTRY WITH A CAUSE: WINTER CHARITY DRIVE 2025

The Department of Chemistry organised a Winter Charity Drive as part of the departmental community outreach initiative 'Chemistry with a Cause'. This was in support of the Cape of Good Hope SPCA which is an animal welfare organisation based in Grassy Park, Cape Town.

This organisation goes above and beyond the call of duty with the work they do in caring for animals of all kinds, with winter being a particularly vulnerable time for them. At any time, they have ~400 animals in their care where they provide a variety of services from temporary homes, veterinary care, rehoming pets and prevention services. They are also actively involved in helping distressed wildlife and are at the forefront in efforts against animal cruelty.

This initiative was active throughout June where staff and students were invited to participate by donating various essential items. The response was truly remarkable and heartfelt thanks goes to those within the department and other good Samaritans who contributed towards this meaningful cause. It is through their kindness, compassion and generosity, we were able to collect far more than anticipated. Altogether we collected a range of towels, blankets, reams of newspaper, detergent, 15 Kg cat litter and ~100 Kg of assorted pet food.

The donated items were carefully packaged and delivered to the SPCA on 2 July 2025 by a group of staff members. Ms Wendy Loots, Supporter Relations at the Cape of Good Hope SPCA, received this donation with immense gratitude on behalf of the organisation. Ms Loots kindly took the group on an informative and eye-opening tour of their facilities. This tour started at the charity shop then proceeded to the cat and dog facilities within the Adoption Centre. This was followed by visits to the animal clinic, hospital, farmyard and the dog play park. This opportunity allowed the staff to engage with what happens behind-the-scenes and have a better appreciation for where our donations will have the biggest impact. Overall, this organisation has incredible people who form part of a dynamic and diverse team who work tirelessly to ensure that all animals receive the best care possible. They rely heavily on donations in order to fulfil their roles with various ways to get involved which range from volunteering your time to making donations.

A TRANSFORMATIVE STEP TOWARDS SCIENTIFIC INCLUSION

FROM 16 TO 18 JULY, THE DEPARTMENT OF MOLECULAR AND CELL BIOLOGY (MCB) AT THE UNIVERSITY OF CAPE TOWN (UCT) HOSTED MCBENGAGE, A THREE-DAY JOB SHADOWING PROGRAMME THAT REPRESENTED A VITAL STEP TOWARD WIDENING ACCESS TO SCIENCE EDUCATION AND CAREERS.

About 60 matriculants from three high schools in KwaLanga (Kulani High School, Ikamvalethu Secondary School, and Isilimela Secondary School) took their first steps into the world of molecular and cell biology through this initiative.

"This is our first job shadowing programme, which is organised by the Transformation Committee within the Molecular and Cell Biology department," said Dr Sandiswa Mbewana, the director of the Biopharming Research Unit. *"We are here to give you an experience of what it is like in a lab,"* she said as she addressed the Grade 12 learners.

The aim of MCBEngage is to close the opportunity gap for learners from historically disadvantaged communities by providing hands-on lab experience, mentorship, and exposure to career pathways in science. Over the three days, learners were immersed in a dynamic, supportive, and inspiring environment; one where their curiosity was met with enthusiasm, their questions encouraged, and their futures reimagined.

Entering the lab

The programme began on 16 July with a welcome from Dr Mbewana, who framed the experience as more than just a tour; it was a doorway into possibility. Industry representatives from Watchmaker Genomics and Eppendorf followed with presentations on the career prospects available to graduates in molecular and cell biology, showcasing the diversity of scientific careers that reach well beyond academia.

The aim of MCBEngage is to close the opportunity gap for learners from historically disadvantaged communities by providing hands-on lab experience, mentorship, and exposure to career pathways in science.

Learners then received training in lab safety, with emphasis on the importance of personal protective equipment (PPE), proper use of laboratory tools, and basic protocols. They wore lab coats, gloves, and goggles, and began to engage directly with lab techniques. They extracted DNA from bananas, a simple yet powerful introduction to molecular biology.

It was an unforgettable moment for many. *"I didn't think science could be this fun,"* said a learner from Kulani High School. This hands-on activity demystified science, showing it as both approachable and exhilarating. The day continued with a session on microscopy. Learners prepared slides of their own epithelial cells, baker's yeast, and onion cells, learning how to compare different types of eukaryotic cells and handle compound microscopes.

Seeing the invisible

The second day opened with a panel discussion featuring scientists from diverse backgrounds. Dr Sam McCarren, Dr Goodman Mulondo, Dr Naadirah Moola, and Zizipho Yekelo shared personal journeys into science. Following the panel discussion, learners returned to the lab. This time, the microscope work deepened into environmental science. They examined live micro-organisms from contaminated water and learned to distinguish between Gram-positive

and Gram-negative bacteria. These experiences encouraged students to connect microbiology to public health and environmental issues – bringing home the relevance of science to their everyday lives.

The day ended with a new experiment: investigating the effects of antiseptics and disinfectants on microbial growth. Using Dettol, Jik, and Cleen Green, learners tested how these substances impacted bacteria such as E. coli and M. luteus, and measured zones of inhibition. They saw first-hand how the application of scientific knowledge contributes to better hygiene, infection control, and public health. *"We want them to know that science isn't just theory. It's a way of solving real-world problems,"* said one of the lab coordinators.

Vision and belonging

The final day brought the programme full circle. In the morning, learners reviewed the results from their microbial control experiments and participated in a question-and-answer session with lab mentors, reflecting on what they had learned and observed. Then came the tours: first to the Faculty of Health Sciences, hosted by the Medical Virology Group, and later through the MCB department itself, led by the Postgraduate Representative Council. The programme ended with an awards ceremony.

With many learners from under-resourced schools still struggling to see themselves as future biologists, researchers, or technicians thanks to South Africa's past of entrenched inequality, the MCBEngage programme seeks to address this. *"I want to ignite the fire within them for science because they are already science scholars,"* said Dr Mbewana. *"That fire must keep burning so that they continue in the field of science."*

Participants felt that the success of MCBEngage lay in the blend of practical science, exposure to university life, and meaningful human connection. For the learners, the impact was immediate. As Leo Ntlebi, a matriculant at Isilimela Secondary School put it, *"When I came here, it was so fantastic because I got to see different professionals who just gave their experience and what they studied [at university] to get where they are … it just deepened my understanding – not just about science but the variety of science."*

WORKSHOP LAYS GROUNDWORK FOR NEW CLIMATE ACTION INNOVATION LAB

THE UNIVERSITY OF CAPE TOWN'S (UCT) AFRICAN CLIMATE AND DEVELOPMENT INITIATIVE (ACDI), CONVENED A COLLABORATIVE WORKSHOP TO EXPLORE THE DEVELOPMENT OF A PROPOSED CLIMATE ACTION INNOVATION LAB (CAILAB). THE SESSION, BROUGHT TOGETHER A GROUP OF RESEARCHERS, PRACTITIONERS, DESIGNERS, POLICY MAKERS, AND COMMUNITY ORGANISERS FROM CAPE TOWN'S CLIMATE ECOSYSTEM TO SHAPE THIS EMERGING CONCEPT. HELD ON 27 AUGUST, THE WORKSHOP WAS FACILITATED BY THE HASSO PLATTNER SCHOOL OF DESIGN THINKING AFRIKA (D-SCHOOL AFRIKA).

Prof Gina Ziervogel during CAILab's collaborative workshop

CAILab is envisioned as a mission-driven platform that seeks to support teams in transforming climate risks into viable, evidence-based solutions.

The concept builds on insights from earlier proposals and a pilot programme that guided four South African teams through a co-design process to develop climate solutions. The pilot highlighted both the need for this type of innovation support and offered valuable lessons about positioning CAILab effectively.

Unlike many initiatives that concentrate on later stages of innovation, CAILab will focus on the earlier and most fragile stages of solution development, where comprehensive support is often limited. Through a combination of research and open innovation approaches, it aims to accelerate the development of inclusive, locally relevant, evidence-driven solutions to the most pressing climate challenges, while contributing to economic growth and resilience.

This represents an important step toward building South Africa and Africa's capacity for collaborative climate innovation that enables us to develop impactful solutions while also learning from our collective efforts.

A group of researchers, practitioners, designers, policy makers, and community organisers during the CAILab collaborative workshop

Towards a connected innovation ecosystem

Workshop participants explored how CAILab might leverage its proposed innovation processes and research capabilities to attract investment, secure funding, and develop partnerships that could strengthen a climate innovation ecosystem and enhance the overall impact of the lab. Workshop participants discussed CAILab's potential role in bridging the persistent gap between climate risk identification and practical solution development. These discussions also emphasised the lab's commitment to equity and inclusion, and ensuring innovations prioritise those most vulnerable to climate impacts.

Key considerations emerged around determining which types of challenges and teams the platform might support. Participants also noted that real-world solution development involves complex, iterative processes rather than straightforward input-output models, highlighting the non-linear nature of effective climate innovation.

Building strong partnerships across academia, government, civil society, and the private sector was identified as fundamental to CAILab's success. Participants also recognised the unique dual opportunity to learn and advance our understanding of climate innovation processes while creating pathways to design, test, and scale real-world solutions.

Looking ahead

The university recognises that strong foundations exist across the different domains, and now is the time to weave these together to co-design responsive and innovative solutions. While this ambitious journey requires substantial collective effort and dedication, the ACDI remains committed to collaborative learning and growth as it works to address complex climate challenges through transdisciplinary approaches.

The CAILab team is now synthesising workshop feedback to refine the platform concept, with a focus on strengthening implementation pathways. Over the coming months, they're focused on validating their methodology, refining their operational framework and expanding outreach to domain experts, funders, and innovators.

UCT SCHOLAR PUTS AFRICA ON THE SCIENCE WORLD MAP

UNIVERSITY OF CAPE TOWN (UCT) SCIENTIST PROFESSOR KELLY CHIBALE HAS RETURNED FROM A SERIES OF HIGH-PROFILE INTERNATIONAL EVENTS WHERE HE CARRIED A POWERFUL MESSAGE: AFRICA IS NOT JUST A BENEFICIARY OF HEALTH INNOVATION – IT IS A LEADER.

Prof Kelly Chibale addressed two international gatherings recently to showcase Africa's success and potential in drug discovery.

Professor Chibale, the founder and director of UCT's Holistic Drug Discovery and Development (H3D) Centre, gave the closing keynote address at the 66th London International Youth Science Forum (LIYSF), having previously given the first plenary lecture at last year's edition. Sharing the stage with Nobel laureates and inspiring more than 400 young scientists from over 90 countries. He then travelled to Japan, where he participated in a Gates Foundation-hosted event in Tokyo on global health innovation and participated in a side event at the Tokyo International Conference on African Development (TICAD), which was held in Yokohama and was attended by African heads of state.

For Chibale, the invitations are both personal and recognise UCT as a prestigious institution.

"To be invited to speak alongside Nobel laureates is, first of all, a recognition of my own international standing, but it also reflects on UCT as an institution that values and enables excellence," he said.

At LIYSF this year, Chibale deliberately chose a provocative theme: *"Failing your way to success"*. He spoke candidly about setbacks that shaped his career, from failing Grade 7 to facing countless rejections before breaking through in science.

"I told them failure is not fatal. It's not how you start that matters, but how you end up," he said. *"You must be grateful and make the most of every opportunity, because one chance can open the door to many more."*

He also urged students not to allow others to define success for them. *"If you let other people define success, you will always feel like a failure if you don't measure up to other people's definition of success. History-makers are those who refuse to conform and instead focus on their unique gifts and talents that God has blessed them with,"* he told them.

The message struck a chord. Chibale's one-hour talk – delivered partly without slides and *"straight from the heart"* – ended with a loud applause of appreciation. *"Afterwards, I was swarmed. It felt like being a footballer signing autographs. But more seriously, it showed how hungry young people are for stories that are authentic and hopeful,"* he reflected.

Showcasing Africa's innovation

Beyond inspiring youth, Chibale used the global stages to challenge persistent myths that Africa cannot be a source of scientific innovation. *"We are changing that by leading world-class, cutting-edge research that has global impact."*

At LIYSF, he highlighted how H3D is using artificial intelligence (AI) to accelerate drug discovery and tailor medicines to Africa's genetically diverse populations. *"Africa is the most genetically diverse continent on this planet, yet less than 5% of global clinical trials take place here. The implication of this is that*

the African perspective in terms of intrinsic factors such as our genetics is not optimally considered during clinical trials," he explained.

In Japan, Chibale presented H3D's successes in building world-class research and development capacity in Africa, drawing keen interest from global partners. He also showcased the Grand Challenges African Drug Discovery Accelerator (GC-ADDA) network – a H3D Foundation-initiated and UCT-led collaboration bringing together 21 institutions across eight African countries. Funded by the Gates Foundation and LifeArc, GC-ADDA is pooling resources and expertise to drive drug discovery across the continent.

"Initiatives like GC-ADDA demonstrate that we are not just making a difference in South Africa, but across Africa as a whole. It's about leadership, economies of scale, and working together to address our shared health challenges," he said.

The power of partnerships

Chibale emphasised that none of this progress is possible without strong partnerships – not only with international funders but also with the South African government.

"As an example, for every dollar we've received from the Gates Foundation, the South African government has matched it through the Technology Innovation Agency and Strategic Health Innovation Partnerships unit of the South African Medical Research Council," he noted. *"That sends a strong signal that even in a country with enormous social challenges, our government prioritises investing in science and innovation for the future."*

Prof Kelly Chibale challenged myths that Africa cannot be a source of scientific innovation.

By highlighting this support on global platforms, Chibale said he hoped to encourage other African governments to follow suit. *"It's about making tough choices to do the difficult things now; deciding where to invest. Scientific research and innovation must be seen as priorities if we want to secure our future."*

Raising Africa's profile

For Chibale, the importance of these platforms goes beyond recognition. They also provide visibility and create networks that can shift global perceptions of Africa.

"In life, it's often about who you know. People can be very ignorant about Africa, thinking only of poverty, disease and problems," he said. *"When we get a platform like this, it's an opportunity to show the world-class science and infrastructure we have here in South Africa."*

He added that sharing a stage with figures such as Bill Gates in Tokyo and Nobel laureates in London sends a powerful message. *"When people see me there, a scientist out of Africa, it doesn't just raise the profile of UCT or myself – it raises the profile of South Africa and the continent."*

Vision for Africa

Looking ahead, Chibale is clear about his vision: *"Africa must be a global leader in health innovation. With the right partnerships – locally, continentally, and globally – I believe this is not just possible, but inevitable."*

He also believes Africa's future lies in investing in its youth. *"The world is looking to Africa. We have the youngest population globally, and we must give them hope, confidence, and opportunities to contribute,"* he said. *"We should not talk ourselves down. The world is already recognising what Africa can do."*

That recognition, he added, comes with responsibility and must be backed by action at home. *"It requires all of us – universities, governments, the private sector, and civil society – to create jobs and opportunities for young people. There is immense talent on this continent, and we cannot afford to continue losing it through the brain drain."*

Reflecting on his recent travels, Chibale said the lesson he hopes South Africans will take away is one of self-belief. Just look at the Springbok rugby team!

"We must stop focusing only on the negative. The world is recognising Africa's contributions, and there is so much happening here that is world-class," he said. *"The future belongs to our children and their children. We need to nurture their talent, inspire them, and create the conditions for them to thrive here at home."*

DISTINGUISHED ALUMNI LECTURE CELEBRATES SCIENTIFIC EXCELLENCE AND AFRICAN FUTURES

THE FACULTY OF SCIENCE AT THE UNIVERSITY OF CAPE TOWN (UCT) HOSTED ITS ANNUAL DISTINGUISHED ALUMNI LECTURE ON 30 SEPTEMBER 2025, HONOURING TWO EXCEPTIONAL GRADUATES WHOSE CAREERS REFLECT UCT'S COMMITMENT TO ADVANCING SCIENCE, EDUCATION, AND LEADERSHIP ACROSS AFRICA AND BEYOND.

This year's event featured two celebrated alumni: Ms. Hilja Eelu, recognised as the Rising Star Distinguished Alumna, a title awarded to outstanding graduates within 15 years of completing their studies who show exceptional promise and impact; and Mr. Chris Holdsworth, honoured as a Distinguished Alumnus, a prestigious recognition for established leaders whose careers have significantly advanced their fields. One talk focused on health and social innovation, while the other highlighted global finance and foresight, showcasing the diverse impact of a UCT science education.

Strengthening lifelong connections

Opening the evening, the Dean of Science, Professor Hussein Suleman, reflected on the importance of alumni relationships in sustaining UCT's academic community. *"When you hold a UCT degree, you remain part of the institution's story."* He continued, *"Events like this strengthen those ties and celebrate how our graduates continue to contribute to the world through science."*

My life is a science experiment

A PhD candidate in UCT's Department of Statistical Sciences, Ms. Hilja Eelu shared her journey from studying biomedical sciences to leading malaria modelling research that supports public health decision-making for the Namibian government.

Her talk, *"My Life is a Science Experiment,"* explored how curiosity, resilience, and mentorship shaped her path as a scientist and social entrepreneur.

"Each of us has a responsibility to use our skills to make a difference," she said. *"For me, that means focusing on education and health and using science as the bridge between them."*

Hilja Eelu

Ms. Eelu co-founded the African Pathfinder Leaders Initiative (APLI), which develops leadership and entrepreneurship skills among Namibian youth. She also collaborates with an organisation that promotes digital access and learning.

Recognised as the 2019 Namibian Economist Young Businesswoman of the Year and a 2024 L'Oréal–UNESCO Women in Science Young Talent Award laureate, Eelu is now focused on building a Science Centre and Public Health Research Institute in Namibia, a dream she says began during her time at UCT.

Chris Holdsworth

The future is African

Mr. Chris Holdsworth, Chief Investment Strategist at Investec Wealth & Investment, reflected on how his MSc in Mathematical Statistics from UCT laid the foundation for a career analysing complex global markets.

"UCT was my training ground," Holdsworth said. *"The ability to understand complex information and explain it simply is one of the most valuable skills I learned here."*

In his address, *"The Future is African,"* Holdsworth examined the challenges of forecasting in economics, the limitations of big data, and the power of demographic trends. He noted that by 2100, Africa will represent nearly 40% of the global population, positioning the continent as a major force in the world economy. *"If we invest in education and opportunity," he added, "this continent will define the century ahead."*

Holdsworth encouraged institutions like UCT to expand access to world-class science education through digital platforms, empowering the next generation of African thinkers and innovators.

Celebrating achievement and community

The evening concluded with closing remarks from Professor Sheetal Silal, chair of the Faculty of Science Communications and Marketing Committee, who thanked both speakers for their contributions and inspiration.

Guests enjoyed a reception afterwards, continuing conversations sparked by the talks a fitting end to a night celebrating how UCT alumni continue to change the world through science.

HISTORIC BOTANICAL TREASURE DONATED TO UCT

THE UNIVERSITY OF CAPE TOWN (UCT) RECENTLY HOSTED AN EVENT TO MARK THE DONATION OF A FACSIMILE EDITION OF THE FLORA DE LA REAL EXPEDICIÓN BOTÁNICA DEL NUEVO REINO DE GRANADA (1783–1816) TO THE BOLUS HERBARIUM. THE DONATION, MADE BY THE SPANISH CONSULATE, REPRESENTS A SIGNIFICANT ADDITION TO ONE OF SOUTH AFRICA'S MOST IMPORTANT BOTANICAL ARCHIVES.

Directed by Spanish botanist José Celestino Mutis, the Flora is one of the most remarkable outputs of the Enlightenment-era scientific expeditions. Undertaken between 1783 and 1816 across present-day Colombia and northern South America, the expedition produced around 6 000 botanical illustrations, along with manuscripts, plates, correspondence, and some 24 000 dried plant specimens. Though unpublished in Mutis's lifetime, the facsimile edition now available at UCT brings this

extraordinary archive to a broader academic audience.

Celebrating the donation

The event was attended by academics, students, international dignitaries, and collaborative partners. UCT's dean of the Faculty of Science, Professor Hussein Suleman; and the head of the Department of Biological Sciences, Associate Professor Colin Attwood, delivered opening remarks.

Professor Suleman described the donation as *"a bridge between continents, histories, and generations of scientific inquiry"*, noting its potential to connect scholars and institutions across three continents. *"Through the donation, very interesting relationships have started,"* he said. *"There is a lot of exciting research happening in this space, much of what Professor Muthama Muasya and his team are studying."*

Reflecting on the digital preservation aspect, Suleman added: *"I'm a computer scientist; I study information and how we build digital archives. Even though I work with digital information, seeing these physical books is an amazing experience. We have access to all this research, especially in this area where we have already collected vast amounts of material. This donation adds to that collection and is much appreciated."*

Associate Professor Attwood emphasised the rarity and value of such works. *"Rare books are kept behind locked doors,"* he said, recalling that only once in his life had he been granted access to view the collection under strict supervision. He reassured attendees that *"these books will be getting the best care and are certainly in the right place".*

Preserving the Past, Building the Future

Professor Muasya, keeper of the Bolus Herbarium, welcomed guests and reflected on the historical significance of housing both specimens and reference materials together. *"We have a collection of plants and plant names that are attached to a physical specimen,"* he said. *"About 160 years ago, when Harry Bolus founded the Herbarium, he said that the plants and the library must be under the same roof. He saw the value of that connectedness and keeping them together."*

Muasya also shared his personal experience as a researcher navigating historical archives. *"As a PhD student coming from Africa to go to Europe to look at the original books even though some are available online, we were still trying to connect what was growing in Madrid 400 years ago with what was recorded in parts of South America. This collection allows us to make those links between the past, the present, and the future."*

Guests gathered to celebrate the donation of the facsimile edition of the "Flora de la Real Expedición Botánica" to the Bolus Herbarium at UCT.

He concluded by highlighting the importance of international collaboration *"Another important component is the immense relationship between us as researchers in Southern Africa and researchers in Spain, with quite a number of us doing botanical collaboration."*

The Bolus Herbarium

The Bolus Herbarium is the oldest functioning herbarium in South Africa. With over 350 000 specimens, it plays a critical role in supporting taxonomy, systematics, and conservation research, particularly within the biodiversity-rich Cape Floristic Region. It ranks as the third-largest herbarium in South Africa and the third-largest university herbarium in the Southern Hemisphere.

This donation reinforces the herbarium's role as a world-class centre for botanical research and education. UCT researchers and students now have access to a collection that spans centuries, connects continents, and provides critical context for understanding plants as both scientific and cultural heritage. It complements ongoing research with Spanish institutions and further cements the Bolus Herbarium's position as a hub of international botanical scholarship.

UCT RESEARCHERS PRESENT INNOVATIVE FLOOD-MODELLING RESEARCH AT IAHS 2025 IN INDIA

UCT HYDROLOGISTS ARE ADVANCING FLOOD EARLY WARNING SYSTEMS THROUGH INNOVATIVE DATA-DRIVEN MODELLING PRESENTED AT A GLOBAL HYDROLOGY ASSEMBLY.

Researchers from the University of Cape Town's (UCT) Department of Environmental and Geographical Science (EGS) recently presented groundbreaking research on flood early warning systems at the XIIth Scientific Assembly of the International Association of Hydrological Sciences (IAHS 2025), held in Roorkee, India.

Dr Daniel Kibirige, a lecturer in the EGS department, and Nicholas Byaruhanga showcased the pilot testing results from their ongoing Water Research Commission (WRC)-funded project, which explores alternative methods and inputs for improving flood forecasting in South Africa.

Their presentation addressed one of hydrology's most enduring challenges – the availability and reliability of data in gauged and ungauged catchments. To address this, the research team is integrating machine learning algorithms with the Rain-on-Grid modelling approach to enhance the spatial representation of rainfall–runoff processes and bridge critical data gaps. This innovative framework allows for more accurate and scalable simulations of flood dynamics, particularly in data-scarce regions.

"Accurate flood prediction is essential for safeguarding lives and infrastructure, especially in regions with limited hydrological data," said Dr Kibirige. "Our work demonstrates how combining computational modelling with local insights can produce more effective and inclusive early warning systems."

Dr Daniel Kibirige

UCT SCIENCE WEEK IN COLLABORATION WITH MERCK CURIOSITY CUBE: BRINGING SCIENCE TO LIFE FOR LEARNERS

UCT HYDROLOGISTS ARE ADVANCING FLOOD EARLY WARNING SYSTEMS THROUGH INNOVATIVE DATA-DRIVEN MODELLING PRESENTED AT A GLOBAL HYDROLOGY ASSEMBLY.

The University of Cape Town's Faculty of Science, together with the Departments of Chemistry, Physics, Biological Sciences, and Astronomy, hosted a vibrant Science Week in collaboration with Merck from Monday, 8 September to Saturday, 13 September 2025. The week-long event coincided with the 2025 debut of the Merck Curiosity Cube in Southern Africa.

While other universities have hosted the Cube, UCT was the first to pair its visit with a full Science Week of demonstrations, making the experience especially unique for learners.

This mobile science lab, designed to spark curiosity through interactive experiments, became the centrepiece of a programme that engaged learners from 14 primary schools (265 Grade 7 learners) and 11 high schools (230 Grade 8 learners) across the Western Cape with hands-on science demonstrations. For many learners, this was their first time visiting a university campus, making the experience even more inspiring and memorable.

The week was structured to reach a wide audience: Monday to Wednesday (8–10 September) welcomed Grade 7 learners, whose curriculum-linked demonstrations brought theory to life. Thursday and Friday (11–12 September) were dedicated to Grade 8 learners visiting the Merck Curiosity Cube at P15, while Saturday, 13 September, opened the Cube to the UCT community, where it was heartwarming to see staff bringing along their families. The Cube's artificial intelligence (AI) theme was particularly exciting for learners, allowing them to explore how science and technology intersect in ways that shape the future.

Building on the Cube's presence, the organising team worked across departments to deliver lab-based demonstrations linked to the school science curriculum. Learners experienced experiments that made science exciting, interactive, and accessible. A highlight for many was receiving a pair of safety glasses from Merck to take home—a keepsake that left learners thrilled and further encouraged their budding scientific curiosity.

"Merck has been a long-standing partner and supplier to our department, so collaborating on this initiative felt like a natural extension of our shared commitment to education. What struck me most was how passion truly brings purpose—especially when we can promote STEM to learners from all walks of life. Watching their eyes light up as they explored the Curiosity Cube felt like a small victory against the barriers that too often keep brilliant minds from pursuing STEM. It reminded me why we do this work—not for the accolades, but for those life-changing moments when a child sees their own potential." - Dr Samantha Douman

"I feel so grateful to have been part of the team coordinating this event. We wanted to maximise the learners' visit to UCT and The Curiosity Cube, so we thought—let's also plan a Science Week that incorporates demonstrations based on the school curriculum, designed to support under-resourced schools. The goal was to get students excited about science by making their classwork more hands-on and engaging. It was fantastic to see so many departments get involved and to watch postgraduate students and staff engaging directly with the learners. This was such a rewarding event —especially because the learners came from all backgrounds, including schools from informal settlements and farming areas." — Laa-iqa Rylands

Rylands added that the initiative began when Merck first approached the Chemistry Department. From there, the team worked closely with UCT Health & Safety and Traffic Services to ensure smooth operations. Special thanks were extended to Michael Langley, Keith Witbooi, Assoc. Prof. Clive Oliver (Head of Chemistry), and Dean of Science, Prof. Hussein Suleman, for their invaluable support and guidance.

Liaison with Merck partners Rachel Hormeku, Adela Maradee, and Jennifa Mohale helped make the collaboration seamless. A special word of thanks also goes to Assoc. Prof. Mark Blumenthal (Physics), Claire Lawrence-Naidoo and Dr Dalielah Jappie (Chemistry), Assoc. Prof. Sarah Blyth and Dr Itumeleng Monageng (Astronomy), Andrea Plos (Biological Sciences), and all the dedicated staff and postgraduate student volunteers whose energy and commitment brought the demonstrations to life. The commitment observed from each department involved was phenomenal as they engaged with large numbers of learners for three dedicated days of the programme.

Together, their collective effort ensured the event was both impactful and inspiring for learners. We hope that every learner left UCT having discovered something new and feeling even more inspired about the world of science. Behind the scenes, coordination was a collective effort between Laa-iqa Rylands, Dr Samantha Douman, and Hishamodien Hoosain, who worked closely together to liaise with partners, secure sponsorships, and manage logistics, communication, and faculty support.

"We are deeply grateful to our sponsors—Merck, H3D, the Royal Society of Chemistry, and the Department of Chemistry Outreach—for helping us remove barriers and ignite curiosity where it matters most." (Merck sponsored transport, while H3D, the Royal Society of Chemistry, and the Department of Chemistry Outreach contributed towards the lunch packs for learners.)

The event was a true example of collaboration and vision. The combination of interactive exhibits, demonstrations, and academic-community partnership made for an inspiring and impactful celebration of science. The team hopes to welcome Merck and the Curiosity Cube back again next year to build on this success.

UCT HOSTS INAUGURAL SOUTH AFRICAN-JAPANESE DISCRETE HOMOTOPY MEETING

THE UNIVERSITY OF CAPE TOWN (UCT) HOSTED THE INAUGURAL SOUTH AFRICAN-JAPANESE DISCRETE HOMOTOPY MEETING 2025 (SAJDHM2025) ON SEPTEMBER 10TH AND 11TH, 2025. THIS SIGNIFICANT EVENT TOOK PLACE WITHIN UCT'S DEPARTMENT OF MATHEMATICS AND APPLIED MATHEMATICS.

SAJDHM2025 is structured as a workshop designed to serve as the first moment of interaction for members of the International Research Group in Topology, Algebra and Dynamical Systems (IRGTADS). This meeting is crucial for advancing the scientific project titled *"Topological Data Analysis using A-homotopy Theory,"* which is supported by the National Research Foundation of South Africa (NRF) and the Japanese Society for the Promotion of Science (JSPS) from 2025 to 2026.

UCT at the Scientific and Organizational Helm

UCT played a prominent role in the structure and execution of this international collaboration. The event highlights UCT's institutional support, with the welcome messages, including greetings from key figures at the institution such as the Deputy Vice-Chancellor (Research and Internationalization), Professor Jeff Murugan, and the Head of the Department of Mathematics and Applied Mathematics, Professor David Erwin and opening remarks by Consul General Masahiro Katamoto of the Consular Office in Cape Town

"Mobility and dialogue between researchers and students are the lifeblood of academic cooperation," said Consul Masahiro Katamoto, highlighting the spirit of collaboration underpinning the South African–Japan Discrete Homotopy Meeting 2025.

He added, *"Cape Town is a fitting venue, open to the Atlantic, confident in its diversity and a natural meeting point for ideas and historically significant as the place where Japan opened its first diplomatic mission on the African continent in 1918, marking the beginning of Japan–South Africa relations. This collaboration is linking fundamental mathematical ideas to data and computation and creating real opportunities for students and young researchers."*

The organization of SAJDHM2025 was led by Dr Yanga Bavuma (University of Cape Town, South Africa), in collaboration with Dr So Yamagata (Fukuoka University, Japan). Furthermore, Dr Bavuma serves as the Principal Investigator for the South African research team involved in the biennial JSPS and NRF-supported project.

Reflecting on the event, Dr Bavuma explained, *"Topological Data Analysis is a burgeoning field of study in my preferred mathematical topic, algebraic topology, and there is room for more ideas to be developed. In South Africa algebraic topology is not that popular, and finding a team from Japan working in this area led to some ideas that could lead to more advanced research on this topic."*

The IRGTADS group, which systematically promotes seminars, research periods, staff exchanges, and academic development, has recently restructured its operations. Notably, one of its four research groups is based directly within UCT.

Scientific Focus and UCT's Training Role
The primary scientific motivation centers on Topological Data Analysis (TDA), a field rapidly expanding within Artificial Intelligence (AI) research. TDA often connects with AI via algebraic topology, utilizing methods like homotopy theory and persistent homology to analyze large and complex datasets.

SAJDHM2025 was specifically designed to illustrate the main ideas of this project to the youngest members of IRGTADS. These emerging researchers are primarily placed among the University of Cape Town and the University of the Western Cape.

The programme included focused instructional sessions delivered by Dr Bavuma, who provided a short course in basic algebraic topology for the participants over both days of the meeting. *"The short courses were introductions to the ideas behind some key concepts in algebraic topology for those in the conference who may not have been familiar,"* said Dr Bavuma. *"I first taught topological homotopy theory, which is about understanding the shape of a space through loops. Then I spoke about homology theory which is similar but looks more into the boundaries of spaces to classify the shapes."*

Building International Research Networks

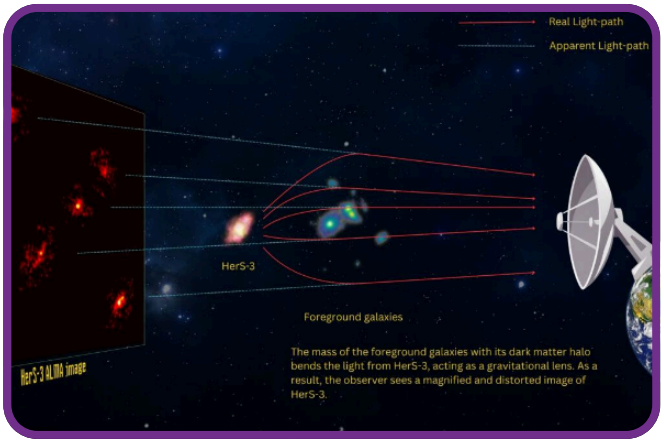
The two-day meeting proved to be not just a scientific exchange but also a foundation for long-term research collaboration. *"I think the conference met its goals,"* said Dr Bavuma. *"We really did a good job of sharing ideas and developing bonds amongst each other that will hopefully go a long way to producing fruitful research.*

In fact, we've already started some joint work looking into developing a new algorithm for Topological Data Analysis based on the expertise of the Japanese team and another member from Mexico. The Japanese team bring with them expertise in discrete homotopy theory, and in South Africa we have people working on Topological Data Analysis and some expertise in spectral graph theory that could come in handy when looking to find different perspectives for insights into our project.

Overall, I am very excited and optimistic about this partnership. Of course, there is also the team from the University of Camerino that took part in the conference, and while their interests are a bit different, there is a bit of an overlap and we welcome them to participate in the project."

EINSTEIN CROSS OPENS A NEW WINDOW INTO STUDYING DARK MATTER IN THE DISTANT UNIVERSE

AN INTERNATIONAL TEAM OF ASTRONOMERS, INCLUDING ONE FROM THE UNIVERSITY OF CAPE TOWN (UCT), HAS SPOTTED A VERY RARE SIGHT IN THE EARLY UNIVERSE: A GALAXY THAT APPEARS AS AN "EINSTEIN CROSS" – FOUR BRIGHT IMAGES ARRANGED LIKE A CROSS, WITH AN EXTRA FIFTH IMAGE SHINING IN THE MIDDLE.



Einstein Cross

This unusual effect – presented in a paper titled *"HerS-3: An Exceptional Einstein Cross Reveals a Massive Dark Matter Halo"* and has been published in the Astrophysical Journal – is caused by gravitational lensing, where the gravity of massive galaxies bends the light from a more distant galaxy, making it look brighter and appear multiple times in the sky. This system is even more puzzling as the Einstein Cross typically appears with four multiple images, but this one has five.

The galaxy, called HerS-3, is about 11.6 billion light-years away. Its light is being bent by a group of galaxies much closer to us, about 7.8 billion light-years away. Together, they produce this striking cross pattern. Observations were made with several of the world's most powerful telescopes, including NOEMA, ALMA, the VLA, and the Hubble Space Telescope.

What makes this discovery even more exciting is that the arrangement of the five images cannot be explained by the visible galaxies alone. The only way to account for the pattern is to include the presence of a huge, invisible halo of dark matter – a mysterious substance that makes up about 80% of the matter in the Universe but does not give off any light. In this case, the dark matter halo is estimated to be several trillion times the mass of the Sun.

"Seeing this system was a real surprise; it's something we've never observed before," said Dr Lucia Marchetti of UCT's Department Astronomy, who led the Hubble observations. *"It opens a new window into studying dark matter in the distant Universe, at a time when galaxies were far more active than they are today."*

The discovery is important because systems like this act as natural cosmic laboratories. They let scientists zoom in on galaxies from the early Universe with far more detail than would otherwise be possible. At the same time, they provide new ways to study dark matter – the hidden mass that shapes galaxies and the Universe itself.

CELEBRATING OVER 40 YEARS OF INSPIRING YOUNG SCIENTISTS

THE DEPARTMENT OF PHYSICS CELEBRATED MORE THAN 40 YEARS OF PHENOMENAL PHYSICS, AN OUTREACH PROGRAMME THAT HAS BEEN IGNITING CURIOSITY AND EXCITEMENT ABOUT SCIENCE SINCE THE 1980S. EACH YEAR, THE PROGRAMME BRINGS HIGH SCHOOL LEARNERS TO CAMPUS FOR AN AFTERNOON OF LIVE DEMONSTRATIONS THAT BRING SCIENCE TO LIFE. THE PROGRAMME AIMS TO INSPIRE THE NEXT GENERATION OF SCIENTISTS AND ENCOURAGE LEARNERS TO CONSIDER SCIENCE-RELATED STUDIES BEYOND MATRIC AND PERHAPS EVEN PURSUE PHYSICS AT UCT.

Gregor Leigh wowed learners with his captivating experiments.

The 2025 edition of Phenomenal Physics coincided with the International Year of Quantum Science and Technology and featured special demonstrations highlighting the surprising effects of quantum phenomena. Support from the South African Quantum Technology Initiative (SAQTI) enabled learners from schools without their own transport to attend, which ensured that the programme reached a diverse audience across the Western Cape.

Engaging learners across the Western Cape

This year, around 300 Grade 11 learners from schools like Aloe High, COSAT, ISCT, and Joe Slovo Engineering High, to name a few, attended. The event was presented by a team of UCT academics, technical staff, and postgraduate students from physics, astronomy, engineering, and oceanography. Throughout the afternoon, learners were encouraged to make predictions, explain outcomes, and participate in hands-on experiments, bringing theoretical concepts to life.

The department also acknowledged the remarkable contribution of Gregor Leigh, whose creativity and enthusiasm have helped shape the programme over the years. A former senior lecturer in the department, Leigh is renowned for his bold and captivating demonstrations, often among the most daring of the programme. Even in retirement his spirited

presentations continue to inspire both students and colleagues alike.

Debbie Rowe, a teacher at the German International School Cape Town, said her students enjoyed it "immensely" and didn't want to leave – particularly the waves demonstration with burning gas, the liquid nitrogen experiments, and the ping-pong ball chain reaction. She added that every demonstration was fun, engaging, and inspiring, and that they are already looking forward to next year.

Inspiring future scientists

The organisers emphasised that the programme's goal is not only to entertain but to show learners the relevance of physics in the world around them. Beyond sparking scientific curiosity, Phenomenal Physics reflects the department's commitment to broadening access to science. By offering learners from diverse schools the opportunity to engage with live, hands-on experiments, the programme helps bridge gaps in exposure to laboratory-based learning. Demonstrations spanned fundamental mechanics and electricity to quantum phenomena, with highlights like superconducting levitation and liquid nitrogen water rockets.

Didintle Kela, a pupil at Hout Bay International School, found the demonstration brief yet highly informative, noting that each experiment offered insight into the deeper laws that govern the world – from motion to the Bernoulli effect. She was particularly impressed by how these key scientific ideas could be demonstrated with simple setups, adding that the event reminded her how much more there is to learn and encouraged her to continue exploring.

STARLINGS AND THE "MYSTERY" ROOM IN PD HAHN

In mid-October, a request reached the doors of CEM OHSE Unit from Mila Truter involved in the UCT Starling project, sought entry to a room Ishrouded in mystery—its entrance elusive, its keys lost to time. The intrigue deepened as BB, a Starling of renown, was glimpsed slipping through a window into the enigmatic chamber. Rumours swirled of a hidden nest within. BB, a creature of the south side of Upper Campus (Neville Building) born in 2018, has made the PD HAHN building its clandestine haunt for the last few years.

Ten days later, the Starling group observed the parent birds delivering insects to their young, confirming the arrival of new life. Only two chicks had emerged, and they were carefully weighed at one week old.

Another ten days passed before the two chicks were discreetly ringed, receiving the enigmatic names YY and ZZ.

By mid-November, whispers began to circulate that the chicks had left the nest. YY was spotted, stealthily honing its flying skills beyond the confines of the room. However, ZZ remained elusive, its absence shrouded in mystery due to a whispered injury to its wing. Young chicks, with their fledgling wings, are at risk, particularly from lurking predators or the silent threat of passing cars in parking lots, as their flying skills remain unrefined at this tender age.

The hope lingers in hushed tones that YY will one day forge its own path and create a legacy.

Students in the News

THE GSSA AWARDS JOSHUA VAN BLERK WITH THE CORSTORPHINE MEDAL

The Geological Society of South Africa (GSSA) names Joshua van Blerk (27) as the 2025 recipient of the Corstorphine Medal. One medal is awarded annually, in recognition of an exceptional MSc dissertation in the geological sciences. Josh's MSc dissertation was on the oxygen isotope geochemistry of megacrysts (large crystals of minerals such as olivine, pyroxene and garnet) from the Monastery kimberlite in the Free State.

Mr van Blerk is overjoyed, although his first reaction was disbelief, *"my instant reaction was that it must be a mistake"*, he said. Like many students who have done an MSc, Josh also had his fair share of challenges, including the fear of failure and wondering if he had the mental capacity to push through. He recalls that, on some days after reading research papers endlessly, writing one sentence was a very big accomplishment. Josh feels that this recognition affirms that he belongs in geological sciences and that he is smart enough to be here.

Behind any win is a community of individuals that have walked the journey with them, whether throughout the whole process or only for a little while. Josh expressed his gratitude to his academic supervisors (Dr. Geoffrey Howarth, Professor Chris Harris and Professor Philip Janney), who were always willing to assist and gave useful insights pertaining lab work and writing. Josh is most thankful to his family,

Joshua van Blerk during during his MSc graduation.

friends and boyfriend for their love and support they gave him throughout his MSc journey. *"Finally, I would like to give a special thanks to my parents for always being present and caring for my needs and for giving me the opportunity to have a tertiary education"*, said van Blerk.

When asked for words of encouragement to anyone trying to finish their degree, Joshua said this: *"It's cliché, but NEVER GIVE UP! There will inevitably be nights where you feel like you may never figure out a specific problem, but speaking from experience, what worked for me was just powering through it all. Don't stop researching papers for your one answer, don't be afraid of "sounding stupid" when you want to ask a question, don't think that all your hard work will go unrecognised, and never ever think that you're not good enough, because if you put your mind to it, you can accomplish anything!"*

At the present moment, Joshua is working as a Scientific Officer in the MC-ICP-MS facility housed in the Geological Sciences department. *"While my appetite for knowledge is still full, I'd like a little break from research!"*, when asked about his future plans.

UCT STUDY PROBES INFRARED–RADIO CONNECTION IN GALAXIES

THE CLASSIC CONNECTION BETWEEN INFRARED AND RADIO LIGHT IN GALAXIES HAS BEEN GIVEN A NEW EDGE IN A RECENT UNIVERSITY OF CAPE TOWN (UCT) STUDY.

Titled *"Probing the infrared/radio correlation of the full IRAS Revised Bright Galaxy Sample with MeerKAT and the VLA"*, the study is published in the Monthly Notices of the Royal Astronomical Society journal, and is led by PhD candidate in astronomy Malebo Moloko. It explores how galaxies' glow in infrared light is linked to their powerful radio emissions, using cutting-edge data from South Africa's MeerKAT radio telescope and the United States' Very Large Array (VLA).

Stars are born in dense clouds of dust and gas. The most massive stars heat up their surroundings, making the dust shine in infrared light. Later, when these stars explode as supernovae, their remnants accelerate electrons to near-light speeds, producing synchrotron radiation observable at radio wavelengths. This physical chain of events underpins the famous infrared–radio correlation: a cosmic rule of thumb connecting star formation to radio emission.

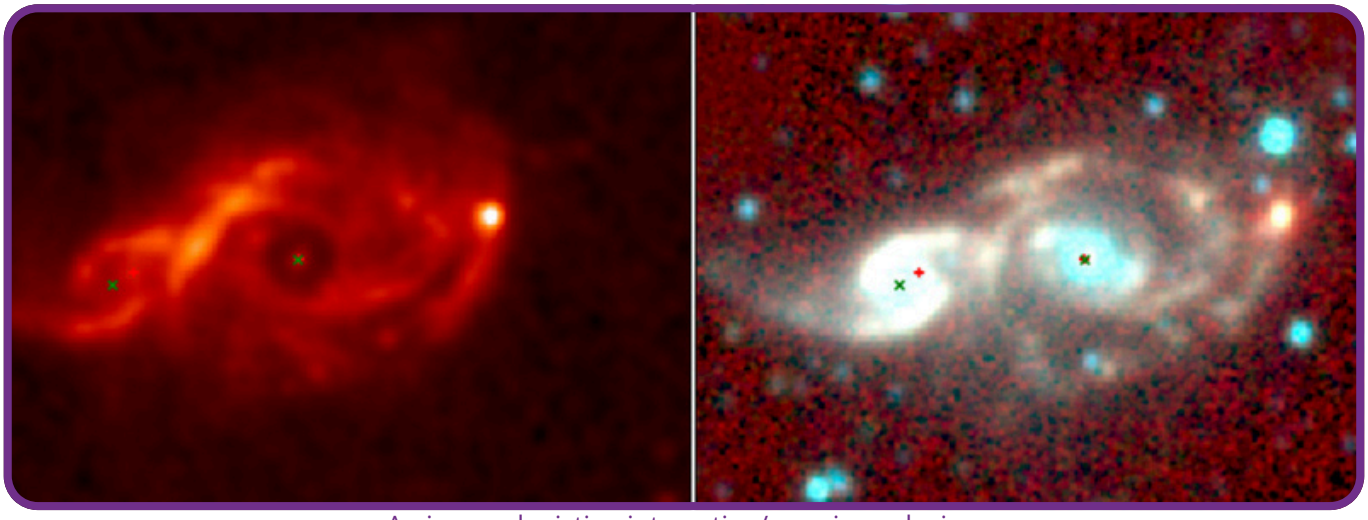
The team was able to distinguish individual components in some of the interacting galaxies in their sample. However, separating isolated and merging galaxies was challenging. *"In some cases, galaxies were already in advanced stages of merging, making it impossible to distinguish their individual properties,"* said Moloko.

Some of the evidence was that interacting galaxies tend to show a weaker infrared–radio correlation and greater scatter compared to isolated galaxies. This suggests that interactions drive extra radio emission and heightened star formation activity, reshaping the balance astronomers often rely on to measure how galaxies evolve.

"By combining MeerKAT and VLA data, we were able to build a large and robust sample to test this correlation in unprecedented detail. This helps us understand not only how galaxies form stars, but also how cosmic interactions stir up the energy we observe across the spectrum. What excites me most is that these findings show the power of using multi-wavelength observations to disentangle the complex interplay of galactic processes," Moloko added.

A personal journey

The study is also personal for Moloko. Among the co-authors is the late Professor Tom Jarrett, Moloko's first PhD supervisor, who was a South African Research Chairs Initiative (SARChI) chair in multi-wavelength astronomy at UCT and a



An image depicting interacting/merging galaxies.

pioneer in infrared astronomy. He passed away in 2024.

“He taught me that to understand the most distant galaxies, we must first study those in our cosmic backyard. This paper continues that vision, celebrating both the science and Prof Jarrett’s legacy.”

Dr Lucia Marchetti, Moloko’s current supervisor and co-author of the paper, added: *“We are glad that these findings can finally be shared with the community, and we are sad that Tom is not here with us to share this achievement. Nevertheless, this paper and Malebo’s PhD thesis represent one of the many examples in which Tom’s legacy lives on, providing new results even after his passing.”*

SOLVING REAL-WORLD PROBLEMS

THE HPI RESEARCH SCHOOL AT UCT CONGRATULATES DR ENOCK MBEWE ON ACHIEVING HIS PHD IN COMPUTER SCIENCE.

Having joined the HPI Research School in 2019, Enock completed his studies under the supervision of Josiah Chavula, with a dissertation entitled Cost-driven Internet Security Decision Model.

Enock has always been driven by a curiosity about how technology can solve real-world problems. Over the years, working with individuals from diverse technological backgrounds, he observed a common trend: many people fear or underutilise technology simply because they do not fully understand it. This observation spurred his early research into how users perceive and interact with technology, particularly the Internet.

One area of particular interest to Enock was security as he realised that many users lacked awareness of even the most basic principles

Dr Enock Mbewe

needed to protect themselves online. Recognising this critical gap, he sought to deepen his understanding of the underlying constructs of security protocols. This led him to pursue a master’s degree in Information Theory, Coding, and Cryptography at Mzuzu University in Malawi. To complement this academic foundation with practical skills, he obtained the Certified Ethical Hacker (CEH) certification and later became an EC-Council certified cybersecurity trainer. His professional experience as an ICT practitioner in both the banking and health sectors, combined with his role as an ICT lecturer at Mzuzu University, further exposed him to the realities of digital illiteracy and technophobia.

"These experiences motivated me to explore the intersection of technology and sociology," says Enock, who decided to explore the techno social dimensions of security for his PhD research. Focusing on how users’ cybersecurity mental models influence their perceptions of the Internet and security threats, this research challenged the prevailing narrative that users are the weakest link in the security ecosystem, too unpredictable, passive, or 'stupid' to be trusted with meaningful control. Through fieldwork and modelling, Enock demonstrated that users, even those with limited computing skills, can make meaningful, cost-aware security decisions when appropriately empowered.
"I developed a Cost-driven Internet Security Decision Model that bridges technical security thinking with behavioural science, offering a more explainable understanding of how real users perceive and respond to Internet threats."

This work not only contributes theoretically but also offers practical guidance for designing inclusive, human-centric digital security solutions. *"I am passionate about ensuring that research doesn't just sit on shelves but influences digital inclusion and resilience on the ground."*

Planning to establish a Cybersecurity, Digital Forensics, and Internet Research Centre under his startup, techNix, Enock plans to foster practical, interdisciplinary Internet security research that bridges academia and the practical realities in the industry, promoting digital skills development, particularly for underserved communities in developing countries. The Centre will also serve as a training and innovation hub, strengthening resilience against digital threats and closing the digital divide.

Enock offers the following advice to fellow students and aspiring researchers, stressing that the PhD journey is less about intelligence and more about resilience. He described it as a profoundly humbling experience, shaped by moments of both progress and doubt. *"There will be days when you feel like you are making breakthroughs,"* he noted, *"and others when you question your entire approach. During these peaks and valleys, don't break, it is all part of the growth process"*

He encourages students to embrace feedback, whether from supervisors, reviewers, or peers, not as a personal critique, but as a vital tool for academic development. *"Even rejection has value," he explained. "It forces you to reflect, to revise, and to return stronger. Feedback, however difficult to hear, is a gift that sharpens your thinking and sustains the rigour of your research."*

Above all, he advocates for unwavering commitment to the research process. *"Show up, keep going, stay curious and open to learning, and remain committed to the integrity of your research,"* he said.

REIMAGINING GEOGRAPHY FROM THE SOUTH: REFLECTIONS ON THE INAUGURAL BLACK GEOGRAPHIES COLLECTIVE WORKSHOP

FROM 30 JULY TO 1 AUGUST, THE BLACK GEOGRAPHIES COLLECTIVE — A NETWORK OF POSTGRADUATE STUDENTS AND EARLY CAREER RESEARCHERS FROM THE UNIVERSITY OF CAPE TOWN (UCT) AND THE UNIVERSITY OF THE WESTERN CAPE (UWC) — HOSTED ITS INAUGURAL NATIONAL WORKSHOP. THIS LANDMARK GATHERING BROUGHT TOGETHER POSTGRADUATE STUDENTS FROM NINE GEOGRAPHY DEPARTMENTS ACROSS SOUTH AFRICA, UNITED BY A COMMON GOAL: TO INTERROGATE THE COLONIAL FOUNDATIONS OF THE DISCIPLINE AND TO IMAGINE A MORE INCLUSIVE AND TRANSFORMATIVE FUTURE FOR GEOGRAPHY IN THE COUNTRY.

Rooted in a shared commitment to Black scholarship and intellectual solidarity, the workshop created space for critical reflection, dialogue, and creative exploration. The event was structured across three days, each hosted in a different institutional setting, intentionally challenging the spatial dominance of historically white institutions and foregrounding more diverse academic geographies.

The first day, hosted at UCT by the Environmental and Geographical Science (EGS) Department, opened with keynote addresses by Professors Brij Maharaj and Maano Ramutsindela. Both speakers offered incisive critiques of the discipline's enduring colonial entanglements, tracing its historical evolution and the potential for radical reorientation. These reflections set the tone for robust discussions on the need to confront and transcend the coloniality of knowledge in South African geography.

To further this decentring agenda, the second day of the workshop moved to UWC, a space with its own radical legacy. Dr Michael Dyssel opened with a contextual framing of UWC Geography within the broader historical trajectory of the institution, illuminating the power of institutional memory in shaping disciplinary identity. This was followed by a keynote from Associate Professor Shari Daya, who urged participants to consider the possibilities of multidisciplinary approaches in reimagining the contemporary landscape of geography. She emphasised the importance of inclusivity, collaboration, and methodological openness in forging new paths forward. Dr Phililе Mbatha concluded the day with a compelling keynote on her research into indigenous knowledge systems, presenting these as vital tools in decolonising conservation practice and discourse in South Africa.

The final day, themed Black Geographies in Motion, marked a deliberate shift toward creative and embodied forms of knowledge-making. Through artistic performance, storytelling, and collaborative workshops, participants engaged with alternative vocabularies and conceptual tools — including terms like Botho and Embo — to reimagine geographic thought through African ontologies and epistemologies.

Across all three days, the workshop prioritised relationship-building, intergenerational dialogue, and the cultivation of a shared, contextually grounded research agenda. Participants left with a renewed commitment to developing Black geographies in South Africa that are not only critical but also constructive — grounded in lived experiences, shaped by community engagement, and driven by a collective desire for epistemic justice.

The Black Geographies Collective's first workshop marks a vital step in the long journey of transforming South African geography. It signals the emergence of a new intellectual space where Black scholars can lead the redefinition of the field, not as a mirror of colonial legacies, but as a canvas for radical imagination, solidarity, and systemic change.

UCT CHEMISTRY STUDENTS VISIT FCC LABORATORIES

A group of senior UCT Chemistry students recently visited the laboratories at Fine Chemicals Corporation (FCC), gaining valuable exposure to the pharmaceutical manufacturing industry. The site visit was organised by Laa-iqa Rylands in collaboration with FCC, with special thanks to Johan Blankenberg for working with us to make it possible.

Students were welcomed with insightful talks by Shonel van Niekerk, Head of HR, and Hilton Mentor, General Manager. Shonel highlighted the company's appreciation for graduates and the importance of nurturing young talent. Hilton offered powerful reflections on career development, sharing lessons on credibility, self-discipline, and the value of discomfort in growth.

The visit also included a tour of FCC's facilities and was a rare opportunity for students to connect theory to real-world application in analytical chemistry and regulatory affairs. It was an inspiring and enriching experience, sure to help guide students as they navigate their future careers.

AIRU STUDENT WINS BEST PAPER AWARD

AIRU student, Nicholas Leisegang, has won the best paper award at the recent JELIA conference, held in Georgia, along with co-authors Prof Tommie Meyer and Prof Ivan Varzinczak. It is an immense honour for a student to win this award.

Held at Kutaisi International University (KIU), the conference selected 47 peer-reviewed research papers from a highly competitive international pool. The winning paper, titled 'Extending Defeasibility for Propositional Standpoint Logics, deals with "standpoint logics". This logical system is aimed at dealing with the beliefs of multiple agents who may disagree with each other, while adding the ability to reason about the prototypical or "usual" beliefs of these agents, as opposed to just the possible or necessary ones.

Before joining the department of Computer Science as a PhD candidate, Leisegang studied maths and philosophy at UCT. *"I grew interested in formal approaches to logic and reasoning. During my masters I became interested in using logic in a more applied setting with real world data that can be messy or incomplete. I mentioned this to some other students in the maths department, and I was put in touch with Prof Tommie Meyer who introduced me to non-monotonic reasoning."*

Founded in France in 1988, the JELIA conference takes place every two years with the goal of strengthening collaboration across disciplines and between theoretical and applied research in AI.

The Artificial Intelligence Research Unit (AIRU) aims to provide research and thought leadership to academia, industry, government and civil society, so that they can leverage AI to improve people's lives. AIRU is based in the Department of Computer Science in the Faculty of Science at the University of Cape Town, and is led by Prof Deshen Moodley.

HPI STUDENT RECEIVES BEST PAPER AWARD AT SACLA 2025

Herman Kandjimi, a member of HPI Research School since 2023, received the Best Paper Award at SACLA 2025.

Herman Kandjimi, a member of HPI Research School since 2023, received the Best Paper Award at SACLA 2025, the 54th Annual Conference of the Southern African Computer Lecturers' Association, that was hosted by the Department of Computer Science & Informatics of the University of the Free State.

The paper entitled *"Leveraging Abstract Syntax Trees To Generate Instructive Hints In Programming"* was co-authored by Mark Levin and Aslam Safla.

Herman's PhD research topic is *"Modelling Students' Source Code Evolutions To Provide Personalised Guidance In Introductory Programming Courses"* and has been inspired by common challenges faced in programming education by both educators and students due to the increased enrolment in the computer science field, heightened by the abstract nature of most programming concepts. His research aims to leverage machine learning algorithms to provide personalised learning environments to students.

He offers the following advice to his fellow students: *"Stick with it, and although chaos and uncertainty may arise, something interesting will surely be attained in the end. Just as Denzel Washington has been famously quoted as saying, 'If you hang around the barbershop long enough, sooner or later you're gonna get a haircut'."*

TEAM CARROTS WIN ENTELECT CHALLENGE UNIVERSITY CUP

Two final-year students, Ayanda Phaketsi and Maphuti Shilabje from the Dept of Computer Science made up the winning team in the 2nd round of the 2025 Entelect Challenge University Cup.

The team, called Team Carrots, came tops in the one-day hackathon where teams of students

from various universities around the country are challenged to solve a coding problem.

This year's competition, "MegaZoo Master Planner," was a complex algorithmic challenge. Their task was to write a program that could autonomously design the most optimal and profitable zoo on a large 2D grid.

Their solution involved developing a deterministic, multi-pass packing algorithm. This program had to strategically place a wide variety of resources, from animal enclosures to visitor facilities, while adhering to a strict budget, complex compatibility rules (such as predators being located away from prey), and maximizing a 'visitor interest' score. The winning strategy prioritized resources based on their 'interest-to-cost' ratio, ensuring that a high-attraction zoo was built that was also highly cost-effective.

The students are currently focused on completing their BSc's in Computer Science and Business Computing. Following graduation, Maphuti aims to secure a software engineering role at a leading tech firm where he can apply his problem-solving skills to real-world challenges. *"I am particularly interested in algorithmic problem-solving and large-scale system optimization. The Entelect challenge was a perfect example of this, highlighting the trade-offs between computational efficiency and finding optimal solutions in a vast search space. I am also keenly interested in the field of applied Machine Learning,"* he says.

Meanwhile Ayanda plans to pursue a career in full-stack development. *"I'm passionate about building scalable and efficient web applications. My specific interests lie in clean software architecture and cloud computing technologies, ensuring that systems are both powerful and maintainable."*

The Entelect Challenge has been running since 2012, with the aim of giving the best programming talent in the country various opportunities to show off their skills.

EGS RESEARCHERS SHINE AT THE 2025 NACA CONFERENCE

A proud moment for the Environmental and Geographical Science Department (EGS) at the University of Cape Town at this year's National Association of Clean Air (NACA) Conference in East London.

Honours student Philip Benyon received the Best Student Presentation Award for his innovative research using floating car data to develop a traffic emission inventory for Cape Town — co-supervised by Megan Bruwer.

Dr Bavisha Koovarjee, postdoctoral researcher, was awarded Best Scientific Presentation for her work on the Mine Waste Risk Atlas, a key project within the Mine Dust Network. Her research, in collaboration with Jennifer Broadhurst and Megan Becker, is advancing how South Africa maps and manages air quality risks in mining regions.

It's deeply inspiring to see our researchers and students recognised nationally for their contributions to clean air research and environmental sustainability — helping shape a healthier, more sustainable future for South Africa and beyond.

SHOWCASING RESEARCH EXCELLENCE AT THE 2025 EGS POSTGRADUATE COLLOQUIUM

THE DEPARTMENT OF ENVIRONMENTAL AND GEOGRAPHICAL SCIENCE (EGS) HOSTED ITS ANNUAL POSTGRADUATE COLLOQUIUM ON FRIDAY, 17 OCTOBER 2025, CELEBRATING THE INNOVATIVE AND DIVERSE RESEARCH BEING CONDUCTED BY ITS POSTGRADUATE STUDENTS.

Held across Studios 1, 3, and 5, the event brought together Honours, Master's, and PhD students to present their research to peers, supervisors, and academic staff. The colloquium provided a dynamic platform for sharing ideas and fostering interdisciplinary discussion on some of the most pressing environmental and geographical challenges of our time.

"It was amazing to witness the diversity of research within our department and to celebrate it with my fellow Honours class," said one Honours student who presented their work at the event.

This year's colloquium concluded with the announcement of the best presentation awards, recognising outstanding research and communication skills.

- Honours category winner: Isla Wilson
- Masters & PhD category winner: Philip Samura

The day ended with a celebratory lunch, giving students and staff an opportunity to reflect on their achievements and connect beyond the presentation venues.

The EGS Department extends its congratulations to all participants and winners for their hard work and enthusiasm, and thanks the organising team for facilitating another successful colloquium. Events like these highlight the department's commitment to fostering academic excellence, collaboration, and community among its postgraduate cohort.

UCT EGS STUDENTS REFLECT ON SSAG 2025

From the 3rd to the 5th of September 2025, I had the privilege of travelling to Joburg with some of my fellow EGS peers to present our research at the Society of South African Geographers 2025 Student Conference, hosted by the University of Johannesburg. The Conference theme was - Geography and Sustainability: How Can We Shape a Better World for All?

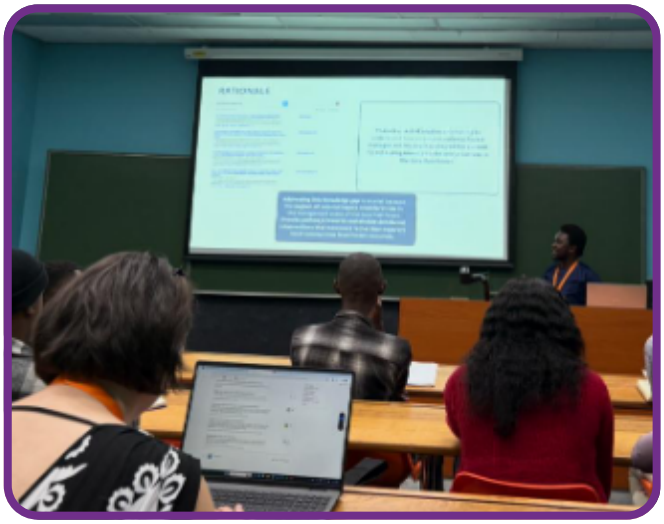
The Conference not only gave us the opportunity to present our work, it also allowed us to gain new perspectives from fellow Geographers, build new connections and be reminded of the incredibly transdisciplinary nature of our studies.

Participating in and attending this conference left us feeling enlightened, excited about our research and grateful for the opportunity to present our work and receive constructive feedback, said Jenna Farrell

Chleo Naidoo shared: Attending the SSAG conference was such a valuable and memorable experience for me. One of the biggest highlights was getting the chance to present my research on water resources management. It was a little nerve-wracking at first, but once I got into it, I felt more confident, and sharing my work with others was really rewarding. The feedback and different opinions I received were so helpful, as they pushed me to think about my project from new angles and consider ideas I might not have thought of on my own.

What I also enjoyed was being able to sit in on the wider geography sessions. It was fascinating to see how diverse the field really is, with topics ranging from human geography to environmental change. Even though my focus was on water resources, I found that so many of the themes connected back to my own interests. It made me appreciate just how interdisciplinary geography is and how important collaboration across different fields can be when tackling big issues like sustainability and resource management.

Overall, the SSAG conference gave me more confidence in myself as a researcher, exposed me to fresh perspectives, and left me feeling motivated to keep growing in my work.



Phillip Samura shared: My dissertation focuses on Colonial Legacies and Forest Management in Gola Rainforest National Park: Pathways for Decolonial Transformations. I presented my preliminary findings at the SSAG. It was my first time presenting my work in such a forum. The conference gave me an excellent opportunity to hone my research communication skills, which are crucial for an emerging scholar.

The feedback I received was enlightening and acknowledged the significance of my study to current conservation discourse. This truly inspired me. The chance to provide feedback to my colleagues was equally fulfilling and reminded me of the significance of effective feedback in scholarship.

I appreciate the support and direction of my supervisors, Prof. Rachel Wynberg and Dr. Sthembile Ndwadwe, Madam Fahdelah Hartley, and the entire Environmental and Geographical Sciences faculty and staff at UCT.

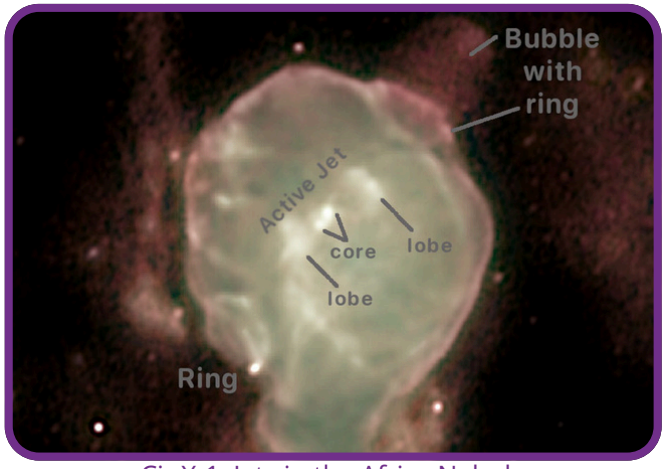
Laveen Safary shared: Various research presentations were done by fellow postgraduate students from many universities within SA. I was particularly interested in the Sustainable Waste Management stream and therefore I attended those sessions for most part of the conference.

Students presented their research on various waste streams such as pharmaceutical household waste, construction and demolition waste; their socio-economic and environmental impacts and their sustainability. Across these value chains comes the need for circular economy principles especially of recycling, creating awareness to the community and incentivizing waste collection programs to enhance behaviour change and create opportunities to improve livelihoods.

Participating in the Q&As also helped in understanding my research focus even more. I learnt a lot in terms of how to approach my research methodology and recommendations to ensure environmental sustainability and socio economic development that enhances livelihoods. It was worth the trip!

NASA'S ASTRONOMY PICTURE OF THE DAY

EACH DAY A DIFFERENT IMAGE OR PHOTOGRAPH OF OUR FASCINATING UNIVERSE IS FEATURED ON THE NASA WEBSITE, ALONG WITH A BRIEF EXPLANATION WRITTEN BY A PROFESSIONAL ASTRONOMER.



Cir X-1: Jets in the Africa Nebula

Kelebogile Gasealahwe, a PhD student in the Department of astronomy's photo was featured on the NASA website on 3 September 2025.

Explanation of the image - How soon do jets form when a supernova gives birth to a neutron star? The Africa Nebula provides clues. This supernova remnant surrounds Circinus X-1, an X-ray emitting neutron star and the companion star it orbits. The image, from the ThunderKAT collaboration on the MeerKAT radio telescope situated in South Africa, shows the bright core-and-lobe structure of Cir X-1's currently active jets inside the nebula. A mere 4600 years old, Cir X-1 could be the "Little Sister" of microquasar SS 433*. However, the newly discovered bubble exiting from a ring-like hole in the upper right of the nebula, along with a ring to the bottom left, demonstrate that other jets previously existed. Computer simulations indicate those jets formed within 100 years of the explosion and lasted up to 1000 years. Surprisingly, to create the observed bubble, the jets need to be more powerful than young neutron stars were previously thought to produce.

BRINGING PHYSICS TO LIFE IN MASIPHUMELELE

In an inspiring effort to make science more accessible, two outreach events are bringing physics to life for learners in Masiphumelele. Led by students from the University of Cape Town's (UCT) Department of Physics, the initiative uses interactive demonstrations to spark curiosity and encourage young learners to see science not just as a subject, but as a way of exploring the world around them.

The Collaboration Story

The Is It Magic? No It's Physics! programme began as a small idea that soon developed into a sustainable outreach initiative. UCT PhD student Rens Roosenstein first ran a solo physics workshop for SurfPop, a nonprofit that works with children from Masiphumelele. The response from learners was so positive that Rens decided to expand the idea into something ongoing and collaborative.


Demonstrating angular momentum with our outreach students, inspiring the next generation of young scientists

"I originally wanted to run just one workshop," said Roosenstein. *"But after speaking with some of the UCT students, I realised there was real enthusiasm to do more. So, I started developing it into a programme where students could take ownership and make it their own."*

UCT Physics is now providing support to the Moncoeur Foundation with its outreach programme, giving students the opportunity to lead interactive sessions using demonstrations familiar from open days, all designed to make science feel engaging and tangible.

"The idea was to make it easy and exciting for UCT students to get involved," added Roosenstein. *"If the barrier is too high, students might hesitate. But if it's fun and accessible, it becomes something they genuinely enjoy doing."*

The Human Element

For the UCT students involved, preparing for the outreach sessions has been both a learning experience and a source of pride. Roosenstein developed a student guide with clear instructions, templates, and presentations, enabling students to run the workshops independently while adding their own creativity. *"We wanted students to take ownership,"* he explained. *"The goal is to make the programme self-sustaining, so each group can build on the work of the last."*

During the sessions, learners are invited to make predictions, test ideas, and see scientific principles in action. Their reactions have been enthusiastic and full of wonder.

Teachers and coaches who work closely with the learners have also noticed the difference. *"This demo and lecture are giving them another side of the world that they didn't know,"* said one coach. *"Since we are kind of limited in our knowledge, the coming of you guys has made them know more and explore more. I believe if we continue doing that, we're going to have some great leaders tomorrow."*

A teacher reflected on how visual demonstrations help different types of learners. *"Some kids learn through books, and some learn through visuals. When they see something happening in front of them, it becomes clearer than just reading about it. It helps them understand what they're really learning."*

During one of the outreach sessions, Blessed Kasowa, a Grade 7 learner from Touch of Eden Academy, was captivated by the hands-on experiments that revealed the surprising side of everyday physics.

"I think science is very interesting and fun. I really like to learn more about it," he said. *"My favourite experiment was the spinning chair, when you put your hands out, you go slower, and when you pull them in, you go faster. It was weird but amazing to see it happen!"*

These moments capture the essence of the programme: to awaken curiosity and show that physics is not something distant or difficult, but something that explains the world they experience every day.

Why It Matters

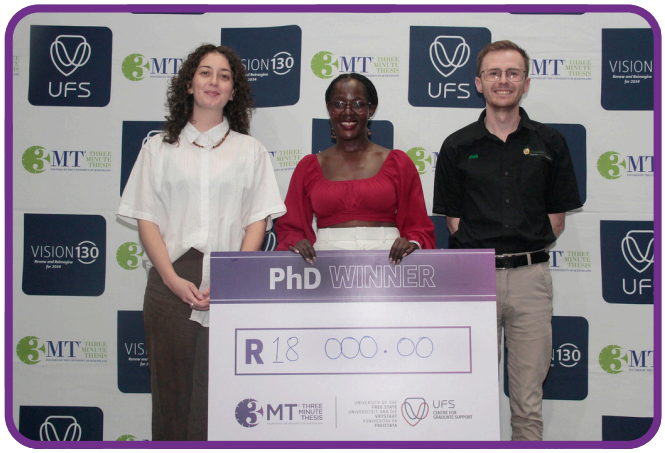
Initiatives like the Is It Magic? No It's Physics! programme play a vital role in connecting university science with young learners who might not otherwise encounter it. By breaking down barriers and focusing on play, curiosity, and creativity, the programme helps bridge educational divides and foster early interest in STEM subjects.

MORGAN LEE WINS AT UCT'S 2025 THREE MINUTE THESIS (3MT)

Morgan Lee, a PhD candidate under the NRF Bioeconomy Research Chair in the EGS department, won the Social Sciences and Humanities category of UCT's 2025 Three Minute Thesis (3MT) competition with a

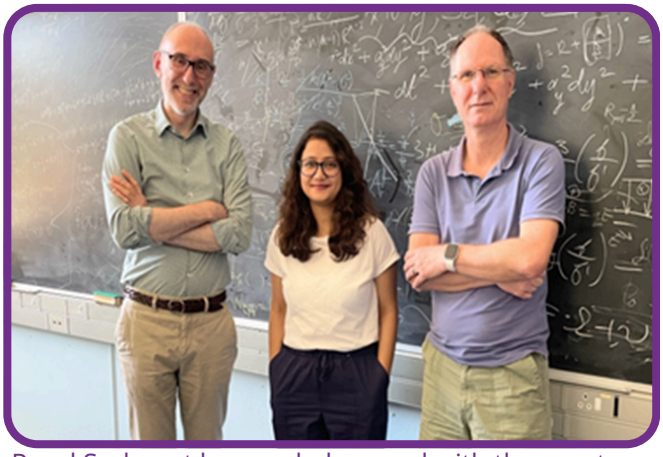
presentation titled “Locked-in: The Hidden Barriers to Sustainable Agriculture.”

The 3MT challenges postgraduates to present their research clearly and engagingly to a non-specialist audience in just three minutes and using only one slide. Following this win, Morgan represented UCT at the national interdisciplinary 3MT finals hosted by the University of the Free State, where she placed third overall out of 20 finalists from across South Africa. Morgan's presentation explored how systemic factors (from technology and finance to policy and culture) constrain farmers’ ability to adopt more sustainable practices in South Africa’s grain sector.



PAYEL SARKAR AWARDED NITHECS POSTDOCTORAL RESEARCH FELLOWSHIP AT UCT

DR PAYEL SARKAR HAS BEEN AWARDED A TWO-YEAR NATIONAL INSTITUTE FOR THEORETICAL AND COMPUTATIONAL SCIENCES (NITHECS) POSTDOCTORAL RESEARCH FELLOWSHIP, TO BE HOSTED BY THE UNIVERSITY OF CAPE TOWN (UCT) COSMOLOGY & GRAVITY GROUP. SHE IS THE ONLY NITHECS POSTDOCTORAL FELLOW ASSIGNED TO UCT AND ONE OF THIRTEEN POSTDOCS APPOINTED NATIONWIDE UNDER THIS INITIATIVE.



Payel Sarkar at her workplace and with the mentors Peter Dunsby and Alvaro de la Cruz-Dombriz at UCT.

Her appointment marks a milestone for both her career and the growth of theoretical and computational cosmology in South Africa. *"I am truly honoured and excited to receive the NITheCS Postdoctoral Research Fellowship,"* says Dr Sarkar. *"Being the only fellow assigned to UCT in this cohort is both a privilege and a responsibility."*

Building national capacity in cosmology

NITheCS supports research across eight themes, including Astronomy & Astrophysics and Theoretical Physics. Its postdoctoral fellowships nurture outstanding early-career researchers who strengthen South Africa’s research profile and foster collaborative work in theory and computation.

The UCT Cosmology & Gravity Group is now one of the largest of its kind in the southern hemisphere, with research spanning early universe physics, modelling inhomogeneity, gravitational wave physics, observational and theoretical cosmology, and relativistic and gravitational astrophysics among others.

"Having Payel in the UCT Cosmology Group both consolidates the pre-eminence of female researchers and continues the longstanding international character of the group. At the same time, it adds inflationary cosmology to our lines of research. The fact that NITheCS has shown this explicit support propels us to keep working and positions UCT as a center of excellence in Cosmology," says Dr Alvaro de la Cruz-Dombriz.

About Dr Payel Sarkar

Dr Sarkar earned her PhD in 2023 from the Birla Institute of Technology and Science–Goa, India, focusing on Modified Gravity and Its Application to Inflationary Cosmology. She previously held a postdoctoral position at the National Institute of Science Education and Research (NISER), Bhubaneswar, India.

Her research has focused on developing cosmological models within modified gravity frameworks, particularly f(R,T) gravity and related extensions. She has also explored various early-universe scenarios such as inflation, matter bounce, and emergent cosmology, incorporating new elements like nonlinear electrodynamics and scalar-curvature mixing terms. Overall, her work aims to create theoretically consistent and observationally viable alternatives to standard cosmology. These models address questions about singularity avoidance and the origin of accelerated expansion, showing promise in early universe cosmology, gravitational lensing, and modified gravity theories.

Research focus at UCT

During her NITheCS fellowship, Dr Sarkar will test modified gravity theories using gravitational lensing as a key observational probe. *"My goal is to develop consistent predictions for extensions of f(R,T) gravity, and to understand how these theories alter gravitational potentials and structure formation,"* she explains.

Her work will examine strong and weak lensing signatures, including shifts in Einstein radii, time delays, magnification patterns, and deflection angles, comparing these predictions with observational data from clusters, lens systems, and surveys such as the Hubble Space Telescope and the Dark Energy Survey.
"I hope my research will provide a deeper understanding of gravitational behaviour often attributed to dark matter and dark energy, and identify testable signatures for current and upcoming surveys," she adds.

Community engagement and broader impact

Dr Sarkar is committed to building networks across South Africa and internationally. *"I look forward to contributing to the growth of the local cosmology and computational gravity community,"* she says.

By the end of her fellowship, she aims to establish a coherent theoretical framework linking modified gravity to observable lensing phenomena, publish results integrating theory with observations, and strengthen South Africa's and the global community's cosmology research landscape.

"This fellowship is more than an individual achievement it reflects the growth of South Africa's theoretical and computational science infrastructure," she notes. *"I hope my work will lead to new insights in cosmology, foster collaborations, and help train the next generation of scientists."*

Dr Sarkar's appointment adds capacity to the UCT Cosmology & Gravity Group, enhancing research activities and stimulating new collaborations across the country.

Staff News

WELCOME TO THE NEW STAFF

THE FACULTY OF SCIENCE WELCOMED THE FOLLOWING NEW STAFF MEMBERS AND CHANGE IN APPOINTMENTS DURING MAY 2025 – OCTOBER 2025

ACDI:
- Mr Brandon Perumaul - Project Manager

BIOLOGICAL SCIENCES:
- Assoc Prof Timotheus van der Niet - Associate Professor
- Dr Gabriel Adam Jamie - Lecturer
- Dr Emma Louise Rocke - Junior Research Fellow

CHEMISTRY:
- Dr Roxanne Mohunlal - Lecturer
- Dr Kathryn Wicht - Lecturer
- Ms Nadiema Taylor - Finance Administrative Assistant

FACULTY OF SCIENCE - FINANCE:
- Dr Mohammed Kajee - Student Development Officer
- Ms Masuda Galsoolker - Asst Finance Manager: Faculty of Science

H3D:
- Dr Grace Obi - Senior Research Scientist

PHYSICS:
- Assoc Prof Mark David Blumenthal - Head of Department
- Miss Nuraan Majiet - Lecturer

SCHOOL OF IT:
- Mr Luyanda Prince Bheyile - Manager: School of IT

OCEANONGRAPHY:
- Dr Brett Kuyper - Chief Scientific Officer
- Dr Raquel Francesca Flynn - Junior Research Fellow

STATISTICAL SCIENCES:
- Professor Sheetal Prakash Silal - Professor
- Mr Murray Brian Christian - Lecturer
- Dr Jake Hector Stangroom - Lecturer
- Mrs Delene Martine van Wyk - Lecturer

STAFF FAREWELLS & RETIRING STAFF

WE SAY GOODBYE TO STAFF RETIRING FROM THE FACULTY OF SCIENCE

PHYSICS:
- Mrs Nadrah Lovric

THE FACULTY SAID GOODBYE TO THE FOLLOWING STAFF:

ACDI:
- Miss Fundisiwe Feziwe Malinga

BIOLOGICAL SCIENCES:
- Ms Sonto Mtolo

H3D:
- Dr Grace Obi

PHYSICS:
- Assoc Prof Sahal Yacoob

UCT Faculty of Science
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Rondebosch, 7700