

the gem

Building Our Biotech Future

Let's put African-
made enzymes
and gene tools
on the map

Science Communication

Science has never been
more visible

Rewriting Africa's Disease History

Ancient DNA unlocking new insights



summary

06



Science Communication

Science has never been more visible. Research spreads instantly on social media, scientists engage directly with global audiences, and public debates increasingly draw on scientific evidence. But new challenges have emerged too, from misinformation and political interference to online harassment and declining trust.

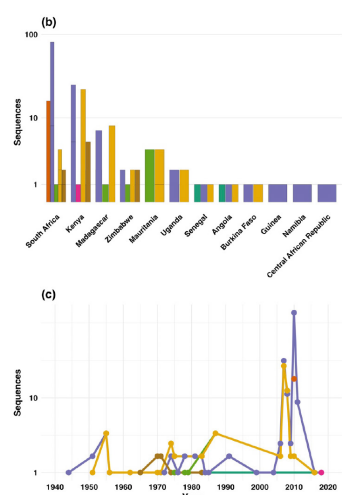
12



Building Africa's Biotech Future

From site visits to start-up: how one African STARS YPP fellow, Kingstone Nihaka, turned lessons in leadership and communication into two grants that will put African-made enzymes and gene tools on the map.

16



Tracking Rift Valley Fever

A new genomic study has mapped how Rift Valley fever virus has evolved across Africa over nearly 80 years, revealing how a handful of genetic changes could shape future outbreaks, vaccine development and disease surveillance.

the gem: Centre for Epidemic Response and Innovation (CERI) & South African Centre for Epidemiology and Modelling Analysis (SACEMA), Stellenbosch University, and KwaZulu-Natal Research, Innovation and Sequencing Platform (KRISP), UKZN, Durban
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22



Where Data Meets Purpose

The conversation around artificial intelligence and data science in South Africa is not starting from zero. The Innovation and Data Science Industry Dinner held in Sandton on 4 June was a timely reminder of how much foundation has already been laid – and how much more becomes possible when the right people share a table.

31



Student Innovation

Stellenbosch University has officially launched IDEA SMASH™ – The Co-Creation Edition, kicking off a bold new platform for student innovators. Keynote speaker Prof Tulio de Oliveira shared insights on SWEAT Africa, setting the tone for an evening buzzing with ideas. Submissions are now open – read this article to find out how your students can turn their big ideas into real-world impact.

35



Africa: Compete Globally

On March 4 this year, African STARS YPP fellow Grace Bosco watched her own face appear on the Nasdaq Tower in Times Square – a name and a company logo, up in lights, next to just nine others chosen from thousands of entrepreneurs worldwide.



editorial

There are editorials that flow easily, and then there are those that demand time and heart. This is one of them. It took me several days to write, because saying goodbye is never easy. As our 2025/2026 African STARS Young Professional Programme (YPP) fellows completed their journey, I found myself reflecting on what it means to watch people you've mentored grow into confident leaders. It felt like a parent standing before an empty nest – filled with pride, yet carrying the quiet sadness of letting go.

Over the past year, our team in Stellenbosch had the privilege of working alongside ten extraordinary fellows: Joel Alukwe, Harries Molepo, Kennedy Mulungu, Kingstone Nihaka, Fezokuhle Khumalo, Celestine Nyamari, Grace Mwakinga, Francisca Adomako, Kabugo Joel, and Dr Monique Barnard-Matthee. We witnessed their transformation as scientists, innovators, and leaders, celebrating their achievements and watching them gain the confidence to pursue ambitious dreams. Seeing them leave is bittersweet, but like any family, our role isn't to hold them back – it's to encourage them to explore, lead, and make their mark on the world. Wherever they go, they remain part of the African STARS family.

This edition celebrates some of our fellows' remarkable accomplishments. Kingstone turned lessons in leadership and communication into two competitive grants advancing African-made enzymes and gene-editing technologies. Celestine secured a partnership with the University of Wisconsin–Madison, joining one of the world's leading centres for biochemistry and protein design. Grace's face lit up the Nasdaq Tower in Times Square, recognised as one of only ten entrepreneurs selected globally – her company harnesses seaweed to capture carbon dioxide far faster than land plants while creating high-value products. And when Ebola re-emerged in Uganda, Kabugo mobilised funding from the ELMA Foundation and forged industry partnerships to ensure frontline public health teams had rapid access to accurate diagnostics. Amusa Wamawobe, an ATT fellow, received the prestigious Robert Austrian Research Award, crediting the scientific writing skills he strengthened through the fellowship. These stories remind us that investing in African talent creates lasting impact – winning international awards, earning fully funded opportunities at world-leading universities, and strengthening Africa's capacity to respond to emerging health threats.

As they say in Mozambique, *"A vida segue e a luta continua"* ("life goes on, and the struggle continues"). We wish our departing fellows every success as they write the next chapters of their journeys, and we welcome our new cohort: 50 fellows from 20 African countries, joining us and our partners at the Institut Pasteur de Dakar – a new generation of African leaders committed to advancing science, creating opportunities, and saving lives. The nest may never stay full for long, but that's precisely how we know it's fulfilling its purpose.

text: Tulio de Oliveira

photo: CERI Media, Charlie Sperring

Navigating the Dark Side of Science Communication

Science has never been more visible. Research findings are shared instantly across social media, scientists engage directly with global audiences, and public debates increasingly draw on scientific evidence. Yet alongside these opportunities come new challenges, from misinformation and political interference to online harassment and declining trust.

text: Katrine Anker-Nilssen photos: CERl Media

These issues took centre stage at the fourth Science Communication Preconference, held ahead of the 76th International Communication Association (ICA) Annual Conference, and hosted by the Centre for Epidemic Response and Innovation (CERl) at Stellenbosch University on 2 June 2026. Bringing together researchers and practitioners from around the world, the event explored the “dark side” of social conversations around science and the challenges of communicating science in an increasingly complex information environment.

For CERl’s Director, Prof Tulio de Oliveira, that starts with who science is speaking to. “We are building not only on academic science communication – not only high-impact journals with lots of citations – but communicating science to the public in a way that is easier to understand.”

When Evidence Challenges Power

One of the recurring themes throughout the conference was the relationship between science and power, and how evidence can become contested when it challenges political priorities, economic interests, or established ways of thinking.

Climate researcher John Paul Cauchi from Queen Mary University of London, Malta Campus, described what he calls structural silencing – situations where uncomfortable evidence is acknowledged but not acted upon, or where research is sidelined because of its implications. “Structural silencing refers to when power structures strive to silence – actively or subtly – uncomfortable truths that threaten development orthodoxy or power echelons,” he said.

Drawing on examples from climate and health research,



Cauchi argued that scientific evidence is often challenged when it conflicts with political priorities or economic interests. "Politicians need to understand that ignoring a problem doesn't make it go away," he said. "Nature and physics do not care about our ideologies or our whims." His observations echoed wider discussions about climate change, misinformation, and the growing tension between scientific evidence and political narratives.

Beyond Access to Understanding

While access to information has expanded dramatically in the digital age, several speakers argued that making information available is not the same as making it useful. Sibulele Mabe from South African Environmental Observation Network (SAEON) and The Centre for Humanities Research (CHR) at UWC, whose work focuses on data stewardship and knowledge infrastructures, challenged the idea that science communication begins only when scientists engage with the public. "Making data available does not automatically make it meaningful or usable," she said.

According to Mabe, decisions about how data is documented, curated, visualised, and preserved shape whether it can be understood and used by policymakers, journalists, educators, and communities. "Communication doesn't really begin at public engagement or outreach," she explained. "It is already happening earlier, through these infrastructural decisions."

Her perspective highlighted the often-invisible systems that determine whether knowledge can move successfully between different users and contexts.

Science in The Age of Algorithms

The conference also examined how social media is reshaping the way people encounter scientific information. Researcher Harry Dugmore, from the University of the Sunshine Coast, explored this through online conversations about adult ADHD, one of the most widely discussed mental health topics on platforms such as TikTok and YouTube. While people have long turned to the internet for health information, social media introduces a different dynamic. Algorithms increasingly determine what information people encounter, often introducing health content to users who were not actively searching for it. "You don't even have to be turning to social media – it turns to you," Dugmore said.

Yet, even so, Dugmore cautioned against viewing influencers simply as sources of misinformation. Many successful ADHD content creators combine scientific information with clear explanations, lived experience, and a sense of community. "The most credible influencers cite research and share full references to sources, and often do a good job of acknowledging scientific uncertainty," he said.

Their popularity raises important questions for scientists and communicators. During one discussion, Prof Marina Joubert from Stellenbosch University's Centre for Research on Evaluation, Science and Technology (CREST) and one of the organisers asked: "Is it part of our responsibility as science communicators to be aware of what influencers are communicating? Should we make more of an effort to keep up with new social media channels, if that is where science is meeting society?" The question reflects a growing reality that public understanding of science is increasingly shaped by online creators and communities alongside traditional scientific institutions.

Lost in Translation

Research presented by Prof René Gerrets from the University of Amsterdam and Dr Peter Mangesho from Tanzania's National Institute for Medical Research highlighted the challenges of communicating antimicrobial resistance, or AMR, across languages and cultural contexts.

Their work showed that translating a scientific term into a local language is only one part of the communication process. "Whether the local translation actually resonates with intended audiences, and achieves the desired behavioural change, is quite another matter," said Gerrets. As Prof Marina Joubert observed: "We are not even scratching the surface of effectively communicating beyond English."

Gerrets and Mangesho argued that health communication often places too much emphasis on changing individual behaviour while paying less attention to the broader systems that shape outcomes – the prescribers, vendors, dispensers, and agricultural producers who sit earlier in the chain and often hold more leverage than the end-user.

Beyond Cheerleading for Science

As discussions turned towards solutions, Australian science communicator Jenni Metcalfe, a visiting fellow with the Australian National University, challenged what she describes as "cheerleading" for science – an approach that focuses primarily on promoting science and building trust.

According to Metcalfe, this can be valuable when providing accurate information or inspiring curiosity about scientific discoveries. However, it becomes problematic when it dismisses alternative perspectives or assumes science alone holds all the answers. "It becomes ugly when cheerleading actively dismisses other people's values, concerns and knowledge," she said. Instead, Metcalfe advocates for a more reflexive approach that recognises scientific expertise while also acknowledging cultural, local, Indigenous, and experiential forms of knowledge. "The reflexive science

communicator actively finds out the social, cultural and epistemological contexts of all actors involved in a science communication activity," she explained. Her emphasis on listening, understanding context, and recognising different forms of expertise resonated strongly with discussions throughout the conference.

A more Complex Future

Although the conference focused on misinformation, hostility, political interference, and other challenges, its overall message was not one of pessimism. Rather, the discussions reflected a growing recognition that science communication is evolving beyond simply sharing facts. Increasingly, it is about helping knowledge move meaningfully across political, social, cultural, and technological boundaries.

While misinformation, political polarisation, and artificial intelligence are reshaping the communication landscape, Metcalfe believes new approaches and ways of thinking are emerging that can help science communication continue to serve society. The field's most pressing challenge may no longer be how to reach more people – but how to reach them in ways that are genuinely understood, trusted, and acted upon.

"The question is no longer whether science communication has a dark side," said Maambele Khosa, Head of Communications and Marketing at CERI. "It's how we build it to be resilient enough to cut through the noise and inclusive enough to be understood beyond the academy."

**This pre-conference was made possible by the Munich Science Communication Lab (MSCL) under Prof Bernhard Goodwin, and three centres at Stellenbosch University: the Centre for Research on Evaluation, Science and Technology (CREST), CERI under Prof Tulio de Oliveira, and the Centre for Science Communication (CSC) under Prof Mehita Iqani.*



TB Genomics Spotlight

SU at Europe's leading mycobacteriology conference.

text: Emilyn Costa Conceição

Stellenbosch University represented the PARR-TB sub-study of the GenPath Africa consortium at the 46th Annual Congress of the European Society of Mycobacteriology, held in Verona, Italy, from 22–25 June 2026 – one of the longest-running international meetings dedicated to mycobacterial research, bringing together researchers, clinicians and public health experts to share the latest advances in tuberculosis and nontuberculous mycobacteria.

An oral presentation showcased the PARR-TB implementation research study, which is evaluating the routine use of whole-genome sequencing (WGS) to guide the clinical management of rifampicin-resistant tuberculosis across three health districts in the Western Cape. Presented during a session on new diagnostic strategies for tuberculosis and other pathogens, the research offered a perspective from one of the world's highest TB burden countries, where the challenge extends beyond diagnostic accuracy to implementing precision medicine at scale within routine healthcare.

Rather than focusing only on the sequencing technology, the presentation highlighted the broader implementation journey, including stakeholder engagement, laboratory workflow development, digital integration, clinical decision support, and the communication of genomic results directly to treating clinicians.

A key message was that successfully implementing genomic medicine depends not only on technology, but also on strong partnerships, streamlined systems, and collaboration between researchers, diagnostic laboratories, clinicians and policymakers – elements essential to transforming WGS from a research tool into a clinically actionable diagnostic resource.

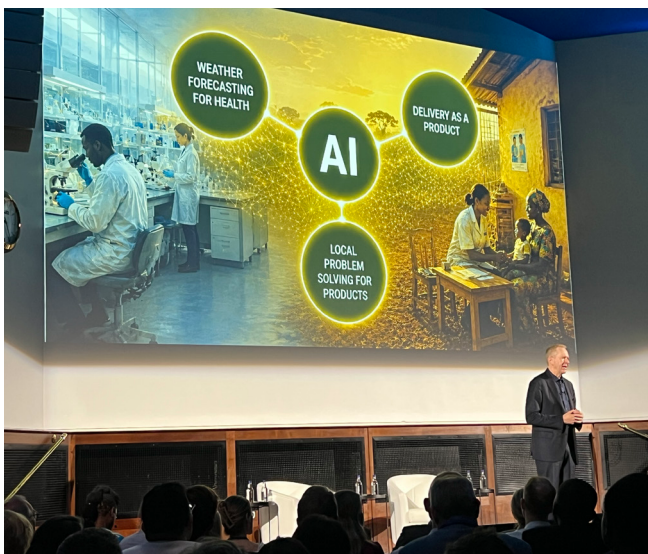
The congress provided an opportunity to exchange ideas with international experts, strengthen collaborations, and showcase South Africa's leadership in implementing precision medicine for tuberculosis, and the experience will help inform ongoing efforts to expand WGS-guided clinical care in high-burden settings.

**Read the full story on our website ceri.africa*

AI, Innovation and the Future of Women's Health

A peek inside the Gates Grand Challenges Annual Meeting 2026, where AI, maternal health, and climate science took centre stage.

text & photo: Prof Jo-Ann Passmore



I recently had the privilege of representing CERI at this year's Gates Grand Challenges Annual Meeting at Imperial College London – a gathering of leaders from the Gates Foundation, Wellcome, CEPI, the Science for Africa Foundation, GSK, Google DeepMind, and other institutions from around the world. Despite representing very different sectors, we were all wrestling with the same question: what is the place of global health in this moment in history?

My connection to this world runs through the Calestous Juma Science Leadership Fellowship, which supports my leadership of the Vaginal Microbiome Research Consortium for Africa (VMRC4Africa) since 2021 – investigating the vaginal microbiome across African populations and developing live biotherapeutic approaches for bacterial vaginosis. I've recently received Gates Foundation funding to understand pathogenesis leading to pelvic inflammatory disease (PID) and the role of host-directed diagnostics like the genital inflammation test (GIFT) to identify women at highest risk. These programmes tie CERI's women's health research

directly into the Foundation's broader priorities: scientific innovation, locally led research, and new solutions for women's health challenges across Africa.

Three threads ran through the whole week for me:

1. AI is changing what scientists can actually do

The one that most blew my mind was the collision between AI and global health, opened by a plenary from Trevor Mundel on AI's role in the Gates Foundation's vision for democratising global health. Google's Gemini for Science ecosystem now spans AlphaFold, AlphaGenome, AlphaEvolve, and Antigravity with Science Skills – allowing AI agents to navigate dozens of scientific databases, integrate knowledge across disciplines, and automate complex research workflows. It goes beyond using software and feels much more like working alongside a team of highly capable scientific collaborators is redefining what is possible in research.

Together, Google's Science tools go way beyond feeling like a collection of clever AI applications and started to resemble an AI-enabled scientific workbench, where discovery, analysis, hypothesis generation, and workflow automation can happen on my old laptop in one ecosystem.

One of the biggest bottlenecks in research, particularly in Africa, is access to advanced bioinformatics expertise. These tools could put powerful scientific capabilities into researchers' hands wherever they are, letting scientists ask more ambitious questions and move faster on problems that matter here but have historically been under-researched. AI is no longer just helping us analyse our data – it's beginning to change what we're capable of asking and doing as scientists.

2. Maternal and child health took centre stage

Maternal and child health surfaced throughout the 4-day

programme. New data from Ruanne Barnabas (MGH, Boston, USA) estimated the burden of maternal and neonatal harm attributable to three STIs – chlamydia, gonorrhoea and trichomoniasis – drawing on 178 studies, alongside work from Imperial highlighting the protective role of *Lactobacillus crispatus* in preventing preterm birth.

The clear headline for me: too many STIs in women remain silent until their consequences are anything but. Most women with common STIs have no symptoms, yet these infections can have profound consequences for their reproductive health and their babies. We now have rapid, point-of-care diagnostic tests for most STIs, but cost remains a major barrier. If we rely on symptoms alone, we will continue to miss most infections. Better access to affordable diagnostics should be a priority for women's health in Africa.

I also have to mention Allison Footman, who I was thrilled to meet in person – the best science communicator I know, with a genuine passion for destigmatising STIs.

3. Climate change is a women's health issue

The third thread that caught me by surprise was climate and global health, with new evidence linking rising ambient temperatures to increased risk of hypertensive disorders of pregnancy, preterm birth and stillbirth.

While much of the meeting focused on extraordinary advances in AI and biotechnology, one message from the final day of the meeting resonated deeply with me: scientific progress alone is not enough. Alongside innovation lies a quieter, but equally important, challenge: earning and maintaining community trust in an age of misinformation.. We've already learnt hard lessons from vaccine hesitancy about what happens when trust lags behind scientific progress – as AI moves into health, we need to carry those lessons with us.

What comes next for CERi

The meeting has already led to tangible opportunities. My exposure to Google Antigravity opened the door to a collaboration with Prof Moses Obimbo at the University of Nairobi, investigating the ecological principles underpinning vaginal microbiome stability across different stages of women's lives – bringing together my work in non-pregnant women with his pregnancy cohorts. We've already submitted a joint grant application to take this forward.

The meeting also opened up opportunities around climate and women's health: I've since applied to the new NEXA funding mechanism, announced at GCAM, for a proof-of-concept study on how extreme heat exposure during pregnancy affects maternal health in Cape Town – combining personal heat monitoring with clinical and microbiome measures, a new research direction for CERi.

AI will change how science is done. We should embrace it.

Iron Deficiency Screening

Mandela Day outreach.



On Mandela Day, SmartPath partnered with the Impilo Project's Health Day at Marconi Beam Primary School in the Joe Slovo

community, focusing on awareness, screening, and follow-up for iron deficiency anaemia among women of reproductive age.

Developed through the African STARS Fellowship at CERi by fellows Fezokuhle Khumalo, Joel Alukwe, and Harries Molepo, SmartPath is an integrated care programme that connects communities, healthcare providers, and data to improve early detection, treatment, and continuity of care. Through education, point-of-care haemoglobin and ferritin testing, and referrals for oral iron, the initiative helped identify women at risk before their symptoms went untreated.

"What has stayed with me most was hearing women describe symptoms they had quietly normalised, like constant exhaustion, forgetfulness and brain fog," said Fezokuhle Khumalo. "Iron deficiency is not just a laboratory result. It affects how women think, work, care for their families and experience everyday life."

The event also gave the SmartPath team valuable insight into community experiences, helping refine the programme while supporting community health workers to recognise iron deficiency and guide women into appropriate care.

Working alongside the Impilo Project, clinicians, community health workers, and the Joe Slovo community, SmartPath demonstrated how connected care pathways can ensure that screening leads to treatment and follow-up, strengthening primary healthcare where it is needed most.



Rewriting Africa's Disease History

New review explores how ancient DNA preserved in archaeological remains could unlock new insights into the origins, evolution, and spread of infectious diseases, helping to inform future surveillance and epidemic preparedness across Africa.

For decades, the story of humanity's ancient diseases has been told largely through bones and DNA recovered in Europe, Asia and the Americas – leaving out the very continent where our species, and its long relationship with infectious disease, began. A new review by researchers from Uppsala University and CERi – the Centre for Epidemic Response and Innovation – aims to change that. Mapping what ancient pathogen genomics has revealed so far, the paper also makes the case for continent-wide ancient pathogen screening to uncover Africa's deep infectious disease history.

"Africa's long history of infectious diseases, reflected in the burdens of tuberculosis, cholera, typhoid, malaria and schistosomiasis, together with genomic evidence pointing to an African origin of the *Mycobacterium tuberculosis* complex ancestor, motivates continent-scale ancient pathogen screening," says CERi Director Prof Tulio de Oliveira, a co-author of the review. "Ancient pathogen genomics is important to understand how diseases emerge and how to prevent them. It normally involves archaeology and access to samples preserved in teeth, bones and mummies."

Highlights

Ancient pathogen genomics has transformed infectious-disease history, yet Africa remains severely

underrepresented despite its central role in human evolution, biodiversity, and pathogen emergence. Evidence from Eurasia and the Americas shows that dated pathogen genomes can overturn models of origin, transmission, and dispersal that were previously inferred from modern data alone.

African ancient pathogen evidence is largely limited to Egyptian remains, and only one sub-Saharan metagenomic study to date has reconstructed an ancient *Rickettsia felis* genome from an approximately 2000-year-old child from Ballito Bay, South Africa.

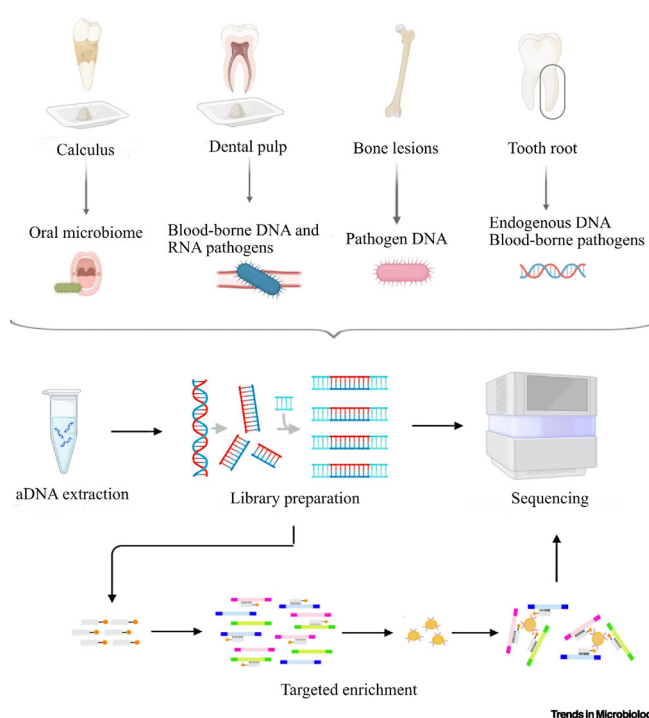
With rapidly improving biomolecular methods and a growing interest in Africa's disease history, the coming years are likely to transform our understanding of ancient pathogens on the continent and their long-term impacts on African populations.

Read the full paper, and list of authors, here:

<https://www.sciencedirect.com/science/article/pii/S0966842X26001794>

Figure 1 (below): Sources and workflows for ancient pathogen genomics.

Ancient pathogens can be detected from multiple biological substrates, including dental calculus, dental pulp, skeletal lesions, and tooth roots. Following ancient DNA extraction, libraries are prepared for shotgun sequencing or targeted enrichment to increase pathogen recovery. Downstream bioinformatic analyses enable the identification, authentication, and genomic reconstruction of bacterial, viral, and eukaryotic pathogens from archaeological remains. aDNA: ancient DNA.



Trends in Microbiology

Building Africa's Biotech Future

From site visits to start-up: how one African STARS fellow turned lessons in leadership and communication into two grants that will put African-made enzymes and gene tools on the map.

text: Katrine Anker-Nilssen photos: CERI Media & Supplied



In July 2026, Kingstone Nihaka had news worth celebrating. His biotech start-up, Plasmigene, was selected as one of only three companies to join the UVU BIO/TIA Bioprocess Platform Acceleration Programme – a fully-funded, equity-free and IP-free initiative that will take the company's molecular and diagnostic enzymes from validated lab-scale processes to full biomanufacturing. In the same month, Plasmigene also secured a grant from the Durban University of Technology's Technology Transfer Office to establish Africa's first Plasmigene Vector Repository – a biological bank that will store, curate, and distribute plasmid vectors to researchers across the continent.

For Kingstone, a fellow of the African STARS Young Professional Programme (YPP), the two announcements are a direct reflection of the training he has received. "I am so humbled to be able to quantify the direct impact of this fellowship before it even ends," he says. "I have a

strong feeling that this is just the beginning, and there are more wins and achievements ahead."

Kingstone's path to this moment was already in motion before he joined the fellowship. He was building Plasmigene alongside his co-founders and team while pursuing his PhD in Biotechnology at the Durban University of Technology, and had already come through other leadership-focused programmes – including the University of Cambridge Global Biotechnology Revolution (GBR) Excellerator Fellowship (2023) and the U.S. Government Mandela Washington Fellowship (2025). "I realised that a company's growth cannot be divorced from personal and professional growth," he explains, "so I was intentional about nurturing and developing my leadership capabilities."

What set the African STARS YPP apart, Kingstone says, was that it went beyond leadership training. The programme also covered media and science

communication and grant writing – skills that would prove decisive. “The fellowship has changed my perspective and mindset about how I see and do things,” he says. “I have come to realise that in translational research and business, technology alone is not enough. One must be able to communicate effectively to stakeholders and people across all walks of life, from funders to consumers of the product.” Kingstone directly credits the communication and grant-writing training with Plasmigene’s ability to secure both new grants and move the company from research and development into biomanufacturing. “A series of experiences during the fellowship shaped Plasmigene’s direction – such as site visits to biotech companies and ecosystem builders.”

He says it was a privilege to work at ImmoBazyme as part of industry placement – where he focused on both laboratory and administrative aspects of manufacturing and the pan-African rollout of an epidermal growth factor treatment for diabetic foot ulcer patients. “I admired many things about ImmoBazyme – from the company culture and work ethic to stakeholder engagement, marketing, and business development. Because of that experience, I found myself more confident in engaging with various stakeholders and selling the brand, not only for ImmoBazyme, but for Plasmigene as well.”

Plasmigene is a biotech start-up with two specialities: manufacturing molecular and diagnostic enzymes, and constructing and producing plasmid vectors – the essential tools researchers use to produce proteins such as enzymes, vaccines, and other therapeutic biologics. “We provide gene and protein solutions to researchers in academia and industry,” Kingstone says. “When we fully scale, Africa ultimately benefits from the work we do because we are focusing on local manufacturing, thereby reducing overdependency on importation and creating jobs for locals.”

The UVU BIO/TIA Bioprocess Platform Acceleration Programme will allow Plasmigene to move its already lab-validated enzyme processes into large-scale manufacturing that complies with the regulatory standards required for market release, while the DUT Technology Transfer Office grant tackles a gap Kingstone has experienced first-hand. Through his PhD research, he has constructed numerous plasmid vectors for gene cloning and protein expression – vectors that, without a shared platform, would likely remain locked in the labs that created them. “There is no single repository of these important tools in Africa,” he explains. “As a result, African scientists pay a premium to import these vectors from wealthy Global North countries. This process is slow, difficult, and sometimes, when these vectors arrive, they do not serve our needs.” The Plasmigene Vector Repository is designed to close that gap – a governance and distribution platform that lets scientists across the continent deposit and access vectors locally.

Selected as one of just three companies for the UVU BIO/TIA programme, Kingstone points to alignment and groundwork as the deciding factors. “The funders told us that they

strongly believe the work we are doing at Plasmigene aligns with their vision,” he says. “It is also important to note that meeting the selection criteria meant that a lot of work had already been done. I attribute this to the whole team at Plasmigene, who believe in this vision and work tirelessly to achieve the set goals.”

As Plasmigene moves from R&D towards commercialisation, Kingstone expects the company’s growth to translate directly into new jobs and training opportunities. Plasmid vector construction and recombinant protein production are niche skills, and Plasmigene has already begun training students and young scientists through its research activities – a pipeline he expects to expand as the company scales. For Kingstone, this moment is proof of something bigger than one company’s success. “Training young African leaders has a ripple effect,” he says, “as they can ethically lead within their areas of influence and give back to their communities – not only by providing jobs, but also by providing goods and services that our African people desperately need but cannot access due to disparities in wealth.”

Over the next 12 to 24 months, Kingstone plans for Plasmigene to establish Africa’s first Plasmid Vector Repository, opening access to scientists across Africa and the Global South, while positioning the company as a leading manufacturer of molecular and diagnostic enzymes on the continent.

Asked what he would tell the new cohort of African STARS fellows, Kingstone doesn’t hesitate: “Celebrate our success as recipients of the prestigious fellowship. But our success is incomplete until we give back to the community and give other deserving Africans a chance to be successful as well. Value relationships along the way, and always remember that the journey is more important than the destination. The fellowship already gives you goodwill – guard that goodwill jealously and make it work for you in your journey of success.”

“The African STARS Fellowship gives you goodwill – guard that goodwill jealously and make it work for you in your journey of success”

– Kingstone Nihaka

Equipping Parliament for AI

As AI reshapes society, Stellenbosch University is helping Parliament prepare for responsible oversight and informed decision-making.

text: Anél Lewis

The growing influence of artificial intelligence (AI) across society is creating opportunities and new responsibilities for lawmakers.

Recognising the need for legislators to better understand this rapidly evolving technology, Stellenbosch University's (SU) Policy Innovation Lab recently presented AI training to more than 200 Members of Parliament (MPs), helping to strengthen Parliament's capacity to oversee and engage with AI-related developments.

The significance of the initiative was highlighted when the Deputy Speaker of Parliament, Dr Annelie Lotriet, referenced the training in her recent budget speech and later reflected on it in a LinkedIn post, noting that "a stronger Parliament begins with stronger Members".

For the Policy Innovation Lab, the acknowledgement served as a tangible example of how academic expertise can contribute to public sector capacity-building, says Dr Prof Willem Fourie, Chair of Policy Innovation and head of SU's Policy Innovation Lab.

A recurring focus of discussion within the Lab is how to measure and strengthen the impact of its work. While the effects of policy engagement are not always immediately visible, there are occasions when the influence of research and training becomes clear.

The recent engagement with Parliament provided one such example.

Parliament plays a critical role in South Africa's democracy through its responsibilities for law-making and oversight of government. As artificial intelligence becomes increasingly embedded in public administration, service delivery and decision-making processes, Parliament's ability to scrutinise and understand these technologies becomes ever more important, explains says Dr Gray Manicom, researcher in digital transformation at the Lab.

"If Parliament is to provide effective oversight of AI in government, Members require more than a general awareness of the technology. They need conceptual and practical knowledge to interrogate key questions around transparency, accountability, security and fairness."

These include whether AI systems operate transparently, whether data is being collected and used lawfully and responsibly, whether automated decisions can be explained and challenged, whether procurement decisions create long-term technological dependencies, and whether the benefits of AI are shared equitably across society.

At the same time, AI also presents opportunities



to support Parliament's own work. Potential applications include analysing legislation, recording and processing parliamentary proceedings, enhancing citizen engagement, supporting translation services, streamlining administrative processes and assisting with legislative drafting.

As the Deputy Speaker observed in her remarks, "The technological transformation before us will not wait for Parliament to catch up."

The training programme was designed to provide MPs with a broad understanding of both the opportunities and challenges presented by AI.

Sessions covered technical aspects of AI, including data, algorithms and digital infrastructure. Participants also explored ethical considerations such as transparency, bias, accountability and responsible use.

The programme further examined international approaches to AI governance and regulation, alongside case studies demonstrating why effective oversight of AI systems is increasingly important for democratic institutions, explains Monique Bennett, Policy Dialogue Manager at the Lab.

A key component of the training involved discussions on how Parliament itself might responsibly incorporate AI into its own processes and operations.

By combining technical, ethical and legislative perspectives, the programme aimed to equip Members with the knowledge needed to engage critically with AI-related issues and make informed decisions in a rapidly changing policy environment.

Dr Tinashe Chikunichawa, of the School For Data Science And Computational Thinking, says by sharing knowledge and building capacity within government institutions, universities can help ensure that technological innovation is accompanied by informed governance and effective oversight.

For the Policy Innovation Lab, the engagement has helped to broaden an important national conversation about the transformative potential of artificial intelligence – both in Parliament and across South African society.

"The training of South Africa's MPs represents one step towards that goal, demonstrating how higher education can support government and prepare the country's institutions for the challenges and opportunities of the digital age," concludes Manicom.

Open Startup: Applications for Science Road 2026



African founders developing science- and technology-driven solutions are invited to apply for Open Startup's Science Road 2026 programme, which supports

innovative startups as they move from research and product validation to commercial growth. The initiative is designed for ambitious entrepreneurs building DeepTech and technology-enabled ventures that address real challenges across the continent.

The programme offers two tailored tracks: a Pre-Seed Track for startups validating their technology or product, and a Seed Track for ventures with demonstrated traction that are preparing to scale. Eligible startups include those working in health, biotechnology, artificial intelligence, climate and sustainability, agriculture, renewable energy, fintech, edtech, logistics, and other high-impact sectors. Participants will gain access to intensive bootcamps, personalised mentorship, expert coaching, investor and industry connections, market and commercialisation support, and opportunities for international exposure. Selected ventures may also be considered for mission-aligned investment of up to US\$20,000 to support their fundraising efforts.

Application deadline: 31 July 2026

Who can apply: Technology and DeepTech startups incorporated and operating in Africa with a committed founding team and an innovative solution addressing a demonstrated need.

More information: <https://open-startup.org/science-road>



Tracking Rift Valley Fever

A new genomic study has mapped how Rift Valley fever virus has evolved across Africa over nearly 80 years, revealing how a handful of genetic changes could shape future outbreaks, vaccine development and disease surveillance.

Researchers analysed nearly 600 Rift Valley fever virus genomes collected between 1944 and 2022 to better understand how the virus evolves as it circulates between livestock, wildlife and humans. Led by PhD candidate, Isaac Emmanuel Omara and colleagues from CERI and the International Livestock Research Institute in Kenya, the study found that the virus has remained remarkably genetically stable over time.

"What surprised me most was how purifying selection has conserved most of the Rift Valley fever virus genome over decades, despite the virus circulating across diverse hosts and regions in Africa," said Omara. "At the same time, we identified a small number of sites under diversifying selection in the viral polymerase and glycoprotein genes, suggesting these may represent key adaptive changes."

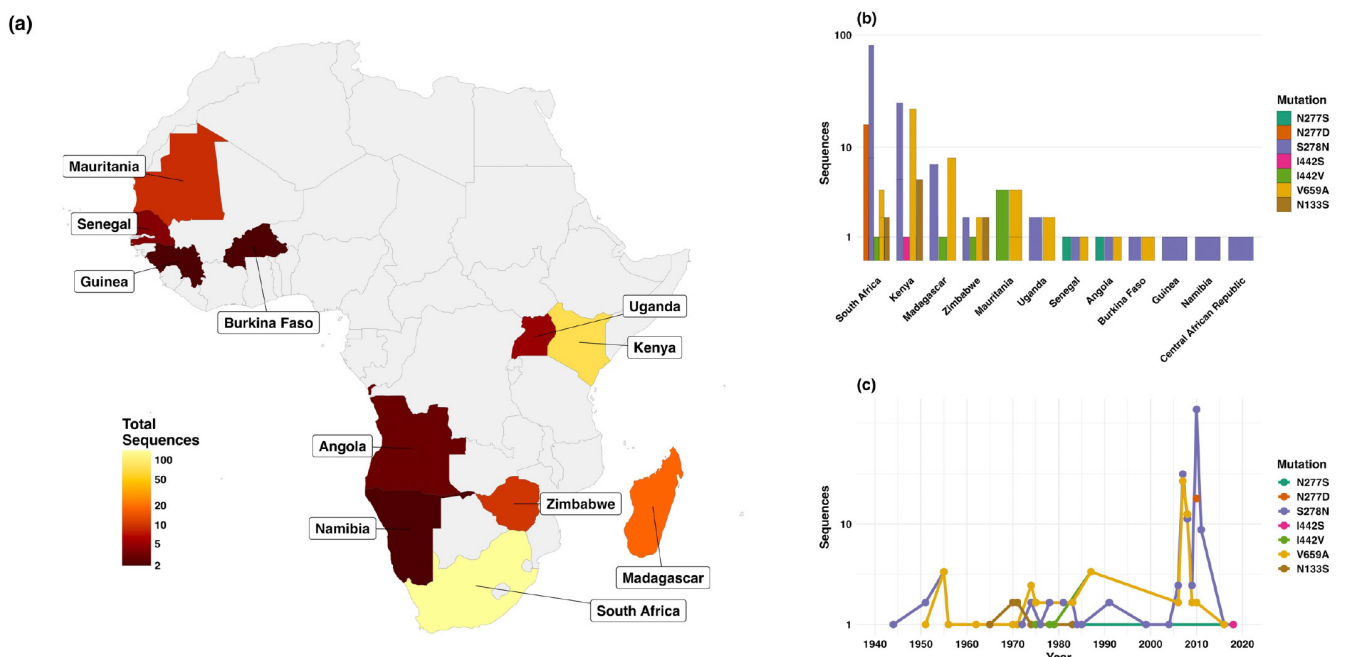
He said the findings reinforce the importance of continued genomic surveillance. "While RVFV remains genetically stable overall, continuous genomic surveillance is essential to detect emerging variants with the potential to alter transmission, host adaptation or vaccine effectiveness before they contribute to future outbreaks."

The adaptive mutations identified in the study could also help guide the development of broader vaccines. "These mutations highlight regions where the virus may be evolving in response to host immune pressure," Omara explained. "By combining these evolutionary findings with immunoinformatics and AI-based structural modelling, we hope to identify vaccine candidates with the potential to provide broad protection against genetically diverse RVFV strains circulating across Africa."

The work comes at a critical time, as climate change, expanding mosquito habitats and increasing livestock movement create new opportunities for Rift Valley fever virus to spread. "Monitoring RVFV evolution helps detect emerging variants early, informs vaccine and diagnostic development and supports strategies that protect both public health and food security," said Omara.

Read the full paper, and list of authors, here:
<https://pubmed.ncbi.nlm.nih.gov/42289653/>

Figure (below): a) Geographic distribution of sequences carrying at least one of these candidate adaptive mutations across Africa, while b) illustrates the country-level distribution of individual adaptive amino acid substitutions.



Mapping Hepatitis Inequities

A new interactive dashboard reveals major gaps in hepatitis B and C genomic surveillance across the globe.

Despite major advances in vaccination and treatment, hepatitis B virus (HBV) and hepatitis C virus (HCV) together still claim over one million lives annually. Yet the global effort to understand these viruses genomically – tracking genotypes, resistance mutations, and disease burden – remains critically uneven. A new study published as a preprint with *The Lancet*, led by researchers from CERI, KRISP, the Francis Crick Institute, and the Africa Health Research Institute (AHRI), exposes the depth of those inequities and offers a powerful new tool to address them: the open-access Hepatitis Dashboard. The platform integrates more than 14,000 sequences from 141 countries with Global Burden of Disease estimates, enabling real-time visualisation of where genomic surveillance is failing to match the populations most at risk.

What the Paper Says

The surveillance gap is stark – and skewed:

The team reviewed existing viral genomic repositories and found them structurally limited: sequence availability is geographically concentrated in China and the United States, while countries carrying the greatest disease burden – including Nigeria, India, and many nations across Africa and the Western Pacific – are severely undersampled. Certain viral genotypes are almost invisible in global databases: HBV genotype E, which predominates in sub-Saharan Africa, and HCV genotypes 5 and 8 are critically underrepresented, hampering the ability to track transmission, monitor drug resistance, and tailor treatment responses in the regions that need it most.

A new metric to measure what's missing:

One of the study's key contributions is the development of a burden-adjusted sequencing coverage metric – a tool that measures not just how many sequences exist from a country, but how representative that sequencing effort is relative to the actual disease burden. By this measure, some of the world's highest-burden nations are also the least represented in genomic datasets, a misalignment that undermines both research and public health decision-making. The team also identified circulating drug resistance mutations across the integrated dataset – findings with direct implications for treatment programmes in settings where second-line therapies may be limited or unavailable.

The Hepatitis Dashboard:

Built on the integration of 10,996 HBV and 3,533 HCV whole-genome sequences from public repositories, combined with Global Burden of Disease estimates, the Hepatitis Dashboard is an open-access interactive platform covering sequences from 141 countries. It is designed to be continuously updated and reproducible, giving researchers and public health agencies a real-time view of where genomic coverage is adequate – and where it is dangerously thin. All data and source code are publicly available on GitHub.

2030 elimination targets at risk:

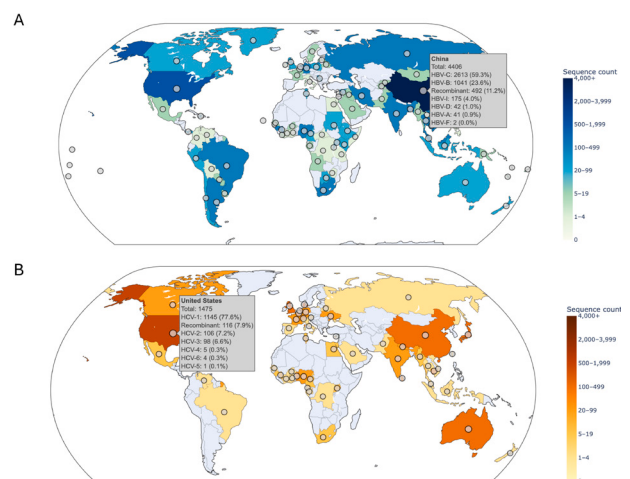
The WHO has set 2030 as the target for eliminating hepatitis B and C as public health threats. The paper's projections are sobering: on current trajectories, neither HBV nor HCV are on track to meet those goals. The dashboard is intended to support the evidence-based sampling strategies and equitable funding decisions needed to change that course.

Read the full paper, and list of authors, here:

<https://www.sciencedirect.com/science/article/pii/>

Figure (below):

Global distribution of HBV and HCV WGS by country. Choropleth maps show the number of publicly available HBV (A) and HCV (B) genomes, coloured by sequence count per country. Genotype distributions are represented by overlaid dots, which display detailed breakdowns on hover in the interactive dashboard.



STARS: New Cohort

50 African young scientists from 20 countries selected for continent's flagship scientific capacity programme.

Beyond individual achievements, the programme is building a growing network of scientists, innovators and institutions working together to strengthen Africa's research, manufacturing and epidemic preparedness capabilities.

The Centre for Epidemic Response and Innovation (CERI) at Stellenbosch University and the Center for Africa's Resilience to Epidemics (CARE) at the Institut Pasteur de Dakar (IPD) jointly announce the selection of 50 fellows from 20 African countries for the 2026 cohort of the African STARS Fellowship Programme, made possible in partnership with the Mastercard Foundation.

African STARS – Scientific Training and Research for African Scientists – is a multi-track fellowship building advanced expertise in genomics, diagnostics, vaccine design and biotechnology entrepreneurship, with a continental pipeline of scientists trained to lead Africa's response to its own health challenges.

The 2026 intake comprises 29 fellows on the Advanced and Translational Training (ATT) track and 21 on the Young Professional Programme (YPP) track, hosted at CERI in Stellenbosch (25 fellows) and CARE-IPD in Dakar (25 fellows). Fellows represent 20 African countries – Benin, Botswana, Cameroon, Central African Republic, Egypt, Ethiopia, Ghana, Kenya, Malawi, Nigeria, Republic of the Congo, Senegal, Sierra

Leone, South Africa, Tanzania, The Gambia, Tunisia, Uganda, Zambia and Zimbabwe – reflecting the programme's commitment to continental reach.

The ATT track offers four months of intensive training in advanced genomics, diagnostic design and vaccine manufacturing; the YPP delivers twelve months in biotechnology innovation and entrepreneurship, including placements at commercial companies and innovation hubs. Together, they reflect the programme's dual mandate of scientific excellence and translational impact, while strengthening the scientific institutions, research ecosystems and innovation networks needed for Africa to respond to future health challenges.

The cohort's expertise spans molecular diagnostics, genomic epidemiology, antimicrobial resistance, vaccine development, bioinformatics, pharmacogenomics, One Health research, wastewater-based surveillance and health technology entrepreneurship. Several fellows arrive with active research programmes, biotech founding roles or government health system positions – evidence that the fellowship attracts established scientists alongside early-career researchers.

The ambition fellows bring to the programme is clear. Christianah Oki, an incoming ATT fellow from Nigeria joining CARE-IPD in August, captures it well: "The solutions to public health problems in Africa must be designed by African

scientists. Through African STARS, I will turn genomic insights into accessible diagnostic tools and mentor emerging researchers to build a self-sustaining scientific community that keeps our brightest minds on the continent.

Beyond individual achievements, the programme is building a growing network of scientists, innovators and institutions working together to strengthen Africa's research, manufacturing and epidemic preparedness capabilities.

A Pipeline Producing Results: Programme Impact to Date

Since its first intake in 2025, African STARS has trained 54 fellows – 27 female and 27 male – aged 25 to 35 years. CERI's wider training ecosystem has now reached more than 900 scientists, while CARE-IPD brings over a century of institutional expertise and more than 3,000 participants trained from 50+ countries.

Fellows are already generating measurable impact. At CERI, Dr Monique Barnard-Matthee secured a three-year NRF grant to advance mRNA vaccine manufacturing automation using the only Tecan Fluent® system of its kind on the continent; and Kennedy Mulungu was selected from more than 900 international applicants as one of only 10 young innovators to present at the UN Science, Technology and Innovation Forum in New York, engaging WIPO and the American Society of Mechanical Engineers on commercialisation pathways for African biotech.

Through CARE-IPD, Marième Samb Traoré applied her training to develop a panfilovirus rapid diagnostics test, integrating fundraising, financial sustainability and stakeholder engagement to position it for population-scale implementation; and Dr Emmanuel Saidu, leading the high-consequence pathogen diagnostics lab for the US CDC and University of Texas Medical Branch at Njala University, contributed to Sierra Leone's national biosample transportation guidelines and, with Africa CDC, developed data systems for High-Consequence Agents and Toxins to strengthen national biosafety preparedness.

For Kennedy, the experience was transformative: "African STARS has been the foundation of my transformation from scientist to entrepreneur. It equipped me with critical skills in innovation, commercialisation, venture building, leadership, and product-market strategy."

It is this kind of trajectory that the programme was designed to produce. As Prof Tulio de Oliveira, Director of CERI at Stellenbosch University, puts it: "Africa cannot depend on others to build its scientific infrastructure. Our role is to ensure that talent has the training, the networks, and the platforms to lead. The results from our first cohort confirm that this model works, with the continued partnership with the Mastercard Foundation, we are hosting a new cohort of 50 STARS fellows."

Continuity and Growth: Positioning the 2026 Cohort

African STARS spans four tracks. Alongside ATT and YPP, the MBA in Healthcare Leadership – developed with Stellenbosch Business School – is a 24-month degree equipping health professionals with governance, finance and management skills for systemic change. The MSc in Bioinformatics of Infectious

Diseases and Pathogen Genomics is a two-year research degree through Stellenbosch University, mentored by world-class scientists and designed to produce Africa's next generation of bioinformatics leaders. Together, the four tracks meet African scientists at every career stage.

The 2026 ATT and YPP cohort brings the programme's cumulative fellow count across all tracks to 105, drawn from sub-Saharan Africa, North Africa and the diaspora. With \$9 million in initial funding and thousands of expected applicants across its lifetime, African STARS stands not only as a training programme but as a signal of what sustained investment in African science can achieve. As Isha Fatma Njai, Head of CARE-IPD, puts it: "Through the African STARS Fellowship, we are giving talented young people across Africa the chance to advance their skills, expand their networks and step into careers that might otherwise have stayed out of reach. This is the result of passionate teams and institutions who care deeply about advancing the next generation

and strengthening our collective sovereignty in health and science. We encourage all partners with this shared vision to join us in investing in a future built by Africa's own talent."

About the Partnership

African STARS is delivered through a joint partnership between CERI at Stellenbosch University and CARE at the Institut Pasteur de Dakar – two of the continent's leading centres for infectious disease research, genomics and vaccine science. Made possible in partnership with the Mastercard Foundation, in alignment with its Saving Lives and Livelihoods initiative, the programme combines CERI's strengths in genomic surveillance and translational science with IPD's expertise in vaccine development and epidemic preparedness, providing fellows with a genuinely Pan-African training environment.

Pictured below are fellows from the 2025 cohort. Full profiles for the 2026 cohort are available at www.starsfellows.africa



Creative Methods for Participatory Research

At a recent lecture and workshop series, the Public Squares Initiative invited researchers, academics, students, and community members to explore creative methods in participatory research.

text: Ameera Crew photos: Robyn-leigh Abrahams

The series featured two sessions, each combining a lecture and practical workshop. Both sessions were presented and facilitated by Dr Gill Black, a Research Fellow at CERl and an engaged research specialist.

Creative Research Methods in Participatory Research
Participatory research is a collaborative approach where stakeholders, especially those directly affected by an issue, partner as co-researchers throughout the research process. This approach creates an equitable partnership between community members and researchers regarding methodology, data collection, and analysis. But how does one bring communities into the research process? This is where creative research methods step in.

Central to the first session, titled ***Creative Research Methods***, was the argument that creative research methods allow for more nuanced forms of expression and knowledge. “The creative arts such as drama, puppetry and music build upon emotions, gestures, and the senses to express the multifaceted nature of social and environmental challenges,” explained Dr Black. She added that these approaches enable participants from affected communities to share knowledge “in ways that

can’t always be reached by traditional qualitative research methods.”

Creative methods as a data collection process are especially relevant in healthcare and wellbeing studies where the lived experiences of affected people cannot be measured through questionnaires and surveys. Visual and creative methods such as body mapping, digital storytelling and photovoice are often less intimidating and more engaging for participants when addressing sensitive topics. These kinds of creative methods are also effective in crossing barriers of literacy and language. An example of this is hand-drawn pictures used in digital storytelling. These images are visual forms of data that can communicate a story to a wide audience regardless of the language they speak or their level of literacy.

The session concluded with a discussion on ethical considerations, underscoring the importance of informed consent and inclusivity. Careful attention must be paid to power dynamics, anonymity, and the potential for distress when working with sensitive topics, highlighting the responsibility researchers carry when engaging with participants.

Participatory Analysis of Creative Data

The second session shifted focus from data collection to interpretation. Titled **Creative Methods Analysis**, it explored how participants can be involved in analysing the data they produced from creative research methods. Traditional research often positions analysis as the role of experts, whereas participatory approaches recognise it as something researchers, participants and stakeholders can do together. Dr Black explained that creative methods generate “rich, contextualised data that can be interpreted not only by researchers, but also by participants themselves”.

At the core of the session was the idea that analysis is not only about identifying themes, but also about translating



lived experience into action. "Through participatory processes, communities can convert lived experience and knowledge into research concepts and action plans that inform interventions", said Dr Black.

One of the case studies presented was the Water and Fire project, which worked with communities in Cape Town to address environmental risks such as flooding, fires and water shortages. The project used an iterative process, combining digital storytelling, community mapping and photovoice to build layered insights into everyday experiences of environmental risk and resilience.

Community-based co-researchers were directly involved in analysing the data they had created. They were asked to identify "one big problem" and "two best solutions" from stories, maps and photographs, before collectively grouping these into shared themes. This collaborative process allowed communities to prioritise key issues and co-develop practical, relevant responses for improving resilience.

Participatory analysis allows for unique research insights

and impactful solutions. However, the process can also be emotionally and ethically demanding as it often involves revisiting trauma and loss. Concluding the session, Dr. Black stressed the importance of creating safe, supportive spaces and recognising that analysis is not only a technical process but also a deeply human one.

Reflections from the sessions:

"This was a very insightful workshop. I learnt about the various kinds of creative research methods, and it was quite interesting to see how we can share perspectives and research findings in a way that is visually provoking and socially relevant." – *Virginia Digomo*

"It was wonderful to work in groups as it enables you to see that diversity of input and other perspectives. It also exposes how your own biases can influence your approach to research and finding answers. Creative methods show just how much richer data can be when we have the perspectives of other people." – *Felicity Hartley*

TB Research Exchange

A four-month exchange strengthened collaboration in tuberculosis genomics and mycobacterial research.

text & photo: Emilyn Costa Conceição

A recent research exchange between Stellenbosch University and Brazil's Federal University of São Paulo (UNIFESP) strengthened international collaboration in tuberculosis and mycobacterial research. Through the CAPES PDSE programme, PhD candidate Lucas Evangelista Marques (*pictured below, far left*) spent four months at Stellenbosch University under the supervision of Prof Cristina Viana and Dr Emilyn Costa Conceição.

Working with the Tuberculosis Genomics (TBG) group and the Centre for Epidemic Response and Innovation (CERI), Lucas received hands-on training in whole-genome sequencing, MALDI-TOF mass spectrometry, bioinformatics, laboratory biosafety and genomic data analysis. He also participated in scientific seminars and research meetings focused on advances in tuberculosis genomics.

The exchange extended beyond training, with technical collaboration involving the National Health Laboratory Service to advance diagnostic workflows for non-

tuberculous mycobacteria. It also contributed to several joint scientific manuscripts and reinforced partnerships between South African and Brazilian researchers.

The programme highlights the value of international collaboration in building scientific capacity, advancing precision medicine, and strengthening research on infectious diseases across the Global South.

**Read the full story on our website ceri.africa*



Where Data Meets Purpose

The conversation around artificial intelligence and data science in South Africa is not starting from zero. The Innovation and Data Science Industry Dinner held in Sandton on 4 June was a timely reminder of how much foundation has already been laid – and how much more becomes possible when the right people share a table.

Hosted as part of the Stellenbosch University Alumni Industry Dinner Series, the evening formed part of a broader Gauteng engagement initiative designed to connect alumni and industry leaders with the University's latest research and innovation. Guests drawn from the health, science, technology, and business sectors created a rich platform for dialogue on the role of data and innovation in shaping South Africa's future.

A Conversation Worth Having

At the centre of the evening were two voices who have earned the right to speak on the intersection of data, health, and impact: Prof Tulio de Oliveira, Director of the Centre for Epidemic Response and Innovation (CERI), and Prof Kanshukan Rajaratnam, Director of the School for Data Science and Computational Thinking at Stellenbosch University.

Their discussion was neither abstract nor detached. They spoke to the urgency of real problems: capacity constraints in health systems, equitable access to innovation, the responsible use of data, and the importance of keeping human beings at the centre of every technological decision.

Prof Rajaratnam was direct about what the moment

demands of both academia and industry. "We face grand challenges that no single discipline can solve. Data science and AI touch every domain, which gives data scientists and AI researchers a real opportunity – and a responsibility, to bring together expertise across fields, government, civil society, and industry," said Prof Rajaratnam. "The task is to co-create contextual solutions to these challenges, and to own the outcome together rather than working on parallel tracks."

These are not unsolvable challenges. But they require precisely the kind of collaboration the dinner was designed to foster: open exchange built on shared vision and mutual accountability.

The Research Foundation Is Already Here

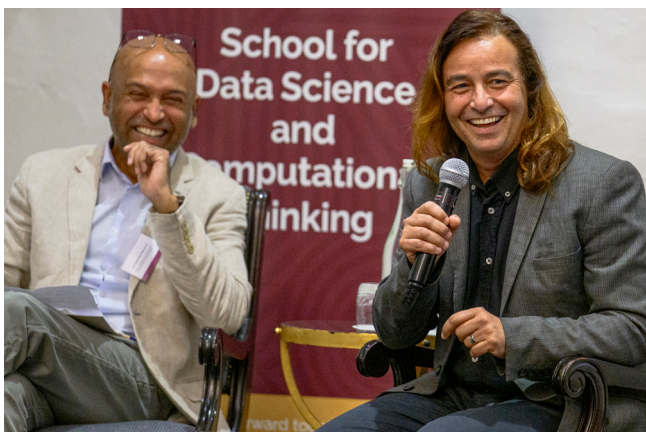
One of the clearest takeaways from the evening was that South Africa's AI and data science ecosystem is already producing results that reach well beyond the country's borders.

CERI's work in genomic surveillance, epidemic modelling, and open science has established the continent as a serious player in global health research. The expertise exists. The infrastructure is growing. What the next level of impact demands is intentional partnership – research institutions and industry working not in parallel, but in genuine collaboration.

Learning in the Room

Among those present was Puseletso Manyaka-Lesofe, a Medical Scientist and 2026 African STARS MBA HCL Fellow, whose accolades – including the 2025 WIA Young Leaders Laureate and recognition in Forbes Africa's Over 30 Under 50 – reflect a career already defined by purpose and momentum.

She came to support her professors, she said. "Their conversation was brilliant. Thought-provoking discussions on how data and innovation are reshaping healthcare and research left me deeply inspired."



What made the evening particularly meaningful was the personal dimension: both professors are directly connected to her MBA studies, conducted in partnership with the Mastercard Foundation. To witness their thinking firsthand – to see the people behind the ideas she engages with daily – was, in her words, both humbling and motivating.

“The aim is not just to absorb knowledge, but to enjoy the journey while engaging with brilliant minds, asking questions, and having fun while growing.” It is a disposition well suited to the moment. The questions being asked at events like this one – about health systems, AI governance, and who ultimately benefits from innovation – require people who are genuinely curious, not merely credentialed.

Why These Rooms Matter

Industry dinners can be easy to dismiss as networking dressed up in formal wear. This one was something different. By bringing researchers, alumni, and industry leaders into the same space, the Alumni Industry Dinner Series creates room for conversations that rarely happen

in day-to-day professional life. The value lies not only in the exchange of ideas, but in building lasting relationships between those generating new knowledge and those positioned to apply it.

In health research, the stakes make those connections particularly important. Questions of access, capacity, and responsible innovation are not abstract ethical dilemmas – they are operational realities that determine whether new tools and technologies reach the people who need them most. The dinner in Sandton did not resolve those questions. But it moved them forward, by putting them in the open among people positioned to act.

The Next Table

The Stellenbosch University Alumni Industry Dinner Series continues to showcase the people and ideas driving innovation across the University, while creating opportunities for meaningful engagement beyond campus. For those working at the intersection of data, health, and impact, these are conversations worth having. The work is already here. What comes next depends on whether we build the partnerships to match.

CEPI Delegates visit CERI

Advancing collaboration for future pandemic preparedness.

Representatives from Coalition for Epidemic Preparedness Innovations (CEPI)'s global laboratory network visited CERI at Stellenbosch University's

Tygerberg campus on 18 June, touring the facility's laboratories as part of a three-day meeting focused on the 100 Days Mission – the global ambition to have safe, effective vaccines ready within 100 days of a pandemic being declared.

The delegation, organised by CEPI's Head of Laboratory Science Group Valentina Bernasconi, brought together partners from the USA, Netherlands, France, Australia, Senegal, Hungary, Mexico, the UK, Austria, and the WHO. The visit, Bernasconi explained, was driven by a genuine curiosity about what leading African institutions are building – particularly in genomic surveillance and epidemic response – and how that work could strengthen CEPI's global network.

On Africa's place in that mission, she was clear: “Africa plays a central role in CEPI's mission to strengthen global pandemic preparedness, both in terms of regional capacity building and as a key partner in generating

data, innovation, and response capabilities. Closer collaboration between organisations such as CEPI and CERI is essential to ensure equitable access to tools, strengthen local expertise, and enable faster detection and response to emerging threats.”

Jane Shallcross, CEPI's Senior Lead for Biosecurity and Biosafety Oversight (*pictured below with Lucious Chabuka*), spoke on behalf of the group when she described CERI's laboratory facilities as “very impressive.”



Bundibugyo Virus Ebola Outbreak

A new Lancet analysis explores the challenges and priorities for epidemic preparedness and response during the ongoing Bundibugyo virus Ebola outbreak in the Democratic Republic of the Congo and Uganda.



With the WHO declaring the Bundibugyo virus (BDBV) Ebola outbreak in DR Congo and Uganda a Public Health Emergency

of International Concern, and Africa CDC declaring it a public health emergency of continental security, a team of leading African scientists and public health officials has published an urgent analysis in The Lancet. As of June 3, 2026, 344 laboratory-confirmed cases and 60 deaths had been recorded in DR Congo, with Uganda reporting 15 confirmed cases and one death. Cross-border transmission has prompted heightened alarm across the region. The outbreak is particularly dangerous because no licensed vaccine or approved therapeutic currently exists for BDBV – and early diagnosis is severely hampered by limited access to suitable point-of-care tests. This paper, led by Jean Nachega, Placide Mbala-Kingebeni, and Jean-Jacques Muyembe-Tamfum, draws on the work of INRB, UVRI, IVI, and Stellenbosch University to map the barriers standing in the way of control – and the actions needed to overcome them.

Prof Tulio de Oliveira, Director of the Centre for Epidemic Response and Innovation (CERI) at Stellenbosch University, says: “I am honoured to collaborate with leading African scientists and public health officials on the Ebola outbreak. In our article published in The Lancet, we discuss the challenges and priorities for epidemic preparedness and response.

We identify six key barriers to controlling the Bundibugyo virus outbreak and outline priority response actions:

1. Community mistrust, misinformation, and resistance to isolation and safe burial practices.
2. Armed conflict, insecurity, population displacement, and cross-border mobility
3. Delayed diagnosis and limited decentralised testing capacity.
4. Fragile health systems and gaps in infection prevention and control.

5. Absence of licensed Bundibugyo virus vaccines or therapeutics and limited outbreak research capacity.
6. Episodic financing and reactive preparedness.

Additionally, we highlight key priorities to support the teams responding directly to the outbreak. Significant work is being done by INRB, UVRI, IVI, and Stellenbosch University.”

What the Paper Says

On community trust and engagement:

The authors highlight how fear, stigma, misinformation, and conspiracy narratives have undermined surveillance, testing, isolation, contact tracing, and vaccination across eastern DR Congo – particularly in communities that perceive infection control measures as externally imposed rather than co-developed. Reports of attacks on health facilities, patients fleeing treatment centres, and disputes over burial practices underscore how quickly trust can erode when dignity and transparency are deprioritised.

The paper calls for community-led approaches: engaging traditional healers, survivor networks, women’s organisations, youth leaders, and local media as active partners in early detection and risk communication – not afterthoughts. Trust-building, the authors argue, must be treated as a core operational component of outbreak control, not a secondary communication exercise.

On armed conflict and cross-border spread:

DR Congo is experiencing one of the world’s largest displacement crises, with approximately 6.9 million internally displaced people – most in the eastern provinces at the heart of this outbreak. Informal trade, mining, agricultural work, and health-seeking behaviour regularly cross administrative and national borders, while ongoing insecurity disrupts field operations, delays laboratory confirmation, and restricts humanitarian

access. The paper calls for harmonised surveillance across DR Congo, Uganda, Rwanda, and South Sudan, with shared line lists, joint contact tracing, and coordinated screening at border entry points.

On diagnostics:

Early Ebola virus disease – including BDBV infection – closely resembles malaria, typhoid, cholera, and Lassa fever, making clinical recognition difficult. Critically, most existing near-patient molecular assays are designed to detect Ebola virus (EBOV) and may not reliably detect BDBV or Sudan virus. The authors call for urgently expanding decentralised near-patient diagnostics, safe specimen transport, and pan-filovirus assay platforms capable of detecting all orthoebolaviruses, validated for field use.

On health systems and the research gap:

No approved vaccine or virus-specific therapeutic currently exists for BDBV – in stark contrast to EBOV, for which licensed vaccines and monoclonal antibody therapies are available. Preliminary genomic analyses suggest the current outbreak stems from a new zoonotic spillover event rather than sustained human-to-human transmission from earlier outbreaks – a finding rapidly generated and shared by scientific teams in DR Congo and Uganda within 48 hours of laboratory confirmation, demonstrating the growing power of Africa-led genomic surveillance.

The authors also flag critical knowledge gaps around BDBV's clinical spectrum in pregnant women, children, and people living with HIV, as well as long-term survivor sequelae including ocular, neurocognitive, and mental health complications. Clinical research must be embedded in the response from the outset, with adaptive trial platforms prepared for candidate vaccines, monoclonal antibodies, and antivirals.

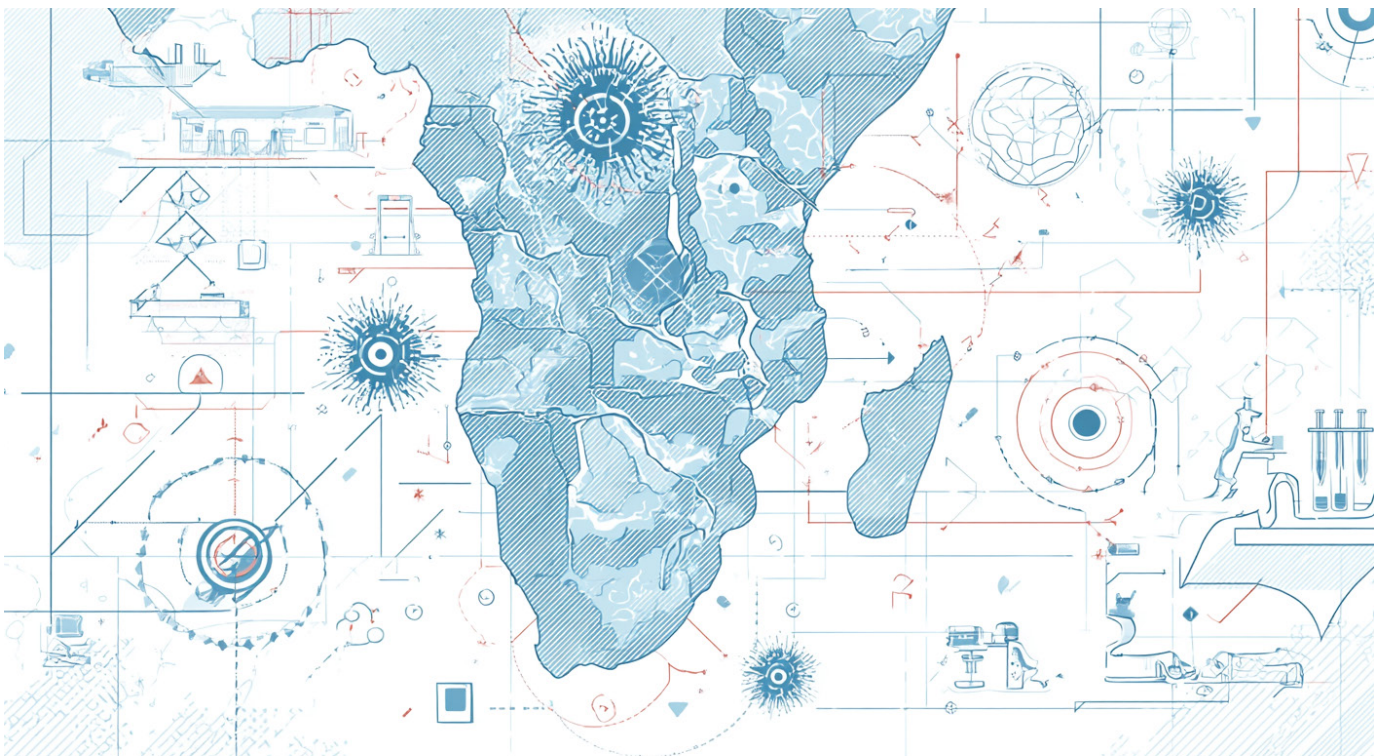
On financing:

Repeated Ebola outbreaks in DR Congo – alongside mpox, cholera, and COVID-19 amid persistent conflict – have exposed the limits of reactive models that surge during emergencies and collapse when international attention fades. The authors call for durable preparedness financing and stronger national public health institutes, moving beyond episodic emergency funding toward sustained regional resilience.

Authors: Jean B Nachega, Placide Mbala-Kingebeni, Sabue Mulangu, Nicaise Ndembi, Wolfgang Preiser, Donald Skinner, Nadia A Sam-Agudu, Francine Ntoumi, Houriiyah Tegally, Cheryl Baxter, Tulio de Oliveira, Henry Kyobe Bosa, Pontiano Kaleebu, Oscar Kallay, Olalekan A Uthman, Edward J Mills, Philip J Rosenthal, Alimuddin Zumla, Jean-Jacques Muyembe-Tamfum.

Read the full paper here:

<https://ceri.africa/publication/?token=613>



Global Vaccine Award

African STARS fellow Amusa Wamawobe has won the prestigious Robert Austrian Research Award, crediting the fellowship with strengthening the scientific writing that helped secure one of the world's most competitive vaccinology research grants.

text: Katrine Anker-Nilssen photo: Supplied

Growing up in rural eastern Uganda, Amusa was surrounded by questions that medicine could not yet answer. In his community – where fewer than one in two hundred children who start primary school reach university – people died from treatable diseases, and families often turned to spiritual and cultural leaders for answers that healthcare could not provide. “These observations made me curious about the human body, how it works, and the underlying mechanisms of infectious diseases. To me, there had to be a better way.”

That curiosity has taken him to a PhD in Clinical Sciences at the Liverpool School of Tropical Medicine, with field research based at the Malawi Liverpool Wellcome Research Programme, and to one of the most competitive awards in global vaccinology. The Robert Austrian Research Award is presented annually to just ten researchers worldwide, provides up to USD 25 000 in research funding, and recognises proposals judged among the most rigorous and impactful in the field.

“I had to read the email several times to believe it,” says Amusa. “This award represents not just personal achievement but validation that you can only fail when you haven’t given it a go.”

Streptococcus pneumoniae, commonly known as pneumococcal disease, remains a leading cause of child mortality, claiming more than 300 000 children under five each year, most of them in sub-Saharan Africa and Southeast Asia. While pneumococcal vaccines have

saved millions of lives, some strains of the bacteria are evolving to evade the protection they provide.

This phenomenon, known as vaccine escape, is at the heart of Amusa’s research. “My research looks at how pneumococcal strains with the potential to escape vaccines spread within households and what level of immunity defines these. The findings will help ensure vaccines remain effective and that children are truly protected.”

Crucially, Amusa chose the household – rather than the individual child – as his unit of study. In many African settings, transmission happens within families and shared living spaces. “By focusing only on the individual child, we miss the bigger picture. Studying the household allows us to understand who is transmitting infection to whom, how immunity influences this, and where interventions can be most effective.”

The USD 25 000 award will fund household sample collection, advanced laboratory analyses, integration of immunological and transmission data, and training for students and laboratory colleagues.

“Without this support, my study would have been limited in scope and depth,” he says. “If successful, it will provide evidence to optimise how pneumococcal vaccines are used in high-transmission settings and inform vaccine implementation in Malawi, across Africa and globally.”

For a scientist of Amusa’s calibre, opportunities abroad are plentiful. Yet he remains committed to building his career in Africa. “The questions I care about are here. The burden of disease I want to address is here, and I can’t address it by merely parking my bags and exiting.”

He credits the African STARS Fellowship – delivered through CERi at Stellenbosch University and CARE at Institut Pasteur de Dakar, in partnership with the Mastercard Foundation – with fundamentally changing not his biology, but how he communicates science.

“The African STARS Fellowship taught me how to structure and communicate ideas with precision – to



move beyond simply presenting data to telling a clear scientific story," he says. "I realised that scientific ideas have to be simplified, feasible, logically compelling and clearly impactful. That fundamentally changed how I write."

One lesson has stayed with him: reading his work aloud. "I now read my work critically, almost as if I am explaining it to a five-year-old. This helps me identify gaps in reasoning, avoid unnecessary complexity, and write more sharply, intentionally and impactfully."

He believes that shift contributed directly to winning one of the most competitive research funding awards in his field.

Amusa sees his work as more than a research project. He hopes it will leave a footprint in vaccine research, strengthen the institution where he works, and inspire the next generation of African scientists.

"Representation matters. Seeing someone from a similar African background succeed can shift what others believe is possible. That ripple effect is just as important as the science itself."

His advice to young African scientists, particularly young women, is simple: "You are more ready than you think. Many of us underestimate our potential because we compare ourselves to systems with more resources. Start with what you have, and allow yourself to grow through the process. Your perspective, your context and your work matter."

For Amusa, the award reinforces both recognition and responsibility. "It is not just recognition; it is a responsibility to receive, execute and deliver as promised. It opens a path for me as an early-career African scientist to lead cutting-edge research and contribute meaningfully to global health."

Empowering Science Teachers

KRISP invests in tomorrow's scientists.

text & photo: Paul Harris



n 23 June, KRISP welcomed 28 Life Sciences teachers from across KwaZulu-Natal for a professional development workshop designed to strengthen links between

classroom teaching and the fast-evolving field of genomics.

The teachers, who serve as cluster leaders in their districts, attended as part of a programme coordinated by the UKZN Science Centre. Through hands-on activities, they explored how the Life Sciences curriculum connects to pathogen genomics, human genetics and public health.

Participants extracted DNA from strawberries using household items to observe DNA with the naked eye, before tackling a forensic investigation demonstrating how genetics can solve real-world mysteries.

"It was great to see the teachers engaging with the hands-on opportunities and extending themselves," said Lexia Naidoo, Manager of the UKZN Science Centre.

The day concluded with guided tours of KRISP's laboratories and discussions on strengthening collaboration between KRISP, UKZN and the Department of Education to support Life Sciences teaching.

"It was very rewarding to know that these teachers will

go on to positively impact so many learners," said Dr Jennifer Giandhari. "We hope this practical workshop and laboratory tour will extend their classroom toolkits."

Supported by DIPLOMICS, the Technology Innovation Agency and UKZN, the workshop reflects KRISP's commitment to building scientific capacity by empowering the educators who inspire tomorrow's scientists.



Turning Kelp and Proteins into Real-World Impact

For most of her research career, Celestine Nyamari had one goal in view: get into the lab, ask good questions, and find answers. Her background in infectious disease and cancer genomics research had given her real depth as a scientist. But over time, a bigger question began to form.

text: Katrine Anker-Nilssen photos: Supplied

Celestine had already built strong technical skills in biomedical research, but wanted to grow beyond conducting research. “I wanted to build international collaborations and learn how scientific discoveries are translated into biotechnology innovations that improve healthcare.”

The African STARS Fellowship’s structure stood out immediately, combining leadership, research, innovation, entrepreneurship training and industry placement. A year at CERI as an African STARS YPP fellow placed Celestine at LaunchLab CERI Bio, working with

industry partner Fluorobiotech on a technology transfer collaboration with Professor Brian Fox’s laboratory at the University of Wisconsin–Madison. Weekly meetings with Fox kept the project on track, and by the time she was ready to apply what she’d learned, she understood the project inside out.

Celestine took on two projects rather than one: recombinant protein production, and enzymatic valorisation of kelp biomass – using enzymes to turn kelp waste into useful products for healthcare and agriculture. The protein work gave her hands-on production experience, while the kelp project pushed her into market



research, business modelling and funding pitches.

After months of remote collaboration, the fellowship brought her to Madison for two weeks in Fox's lab, where she ran enzyme kinetics experiments that showed her what happens to proteins after production – completing a picture she'd only had half of before. The ease of that in-person transition taught her something about collaboration itself: trust is built remotely, long before people meet face to face.

Visits to Illumina, Promega, the Wisconsin Alumni Research Foundation, and the Global Infectious Disease Laboratories showed her how research reagents get developed, how universities support startups and protect ideas, and how genomic surveillance operates at scale for public health.

Conversations with faculty introduced an idea she'd never considered: pursuing a PhD at UW–Madison herself, now that she could see how closely research, industry and innovation connect there. She also introduced the African STARS model to Wisconsin colleagues, who were especially drawn to its entrepreneurial component – sparking talk of a lasting exchange between Stellenbosch and Wisconsin involving collaborative research and student exchanges.

The fellowship reshaped how Celestine thinks about a science career. Where she once saw research as the end goal, she now wants to combine research with developing healthcare technologies, working with industry to bring

ideas closer to real-world use – especially in Africa. "This fellowship has shown me that research can become practical solutions that improve people's lives," she says, hoping to help open doors for other young scientists through mentorship and collaboration.

For Celestine, African STARS' greatest value is its community – scientists, entrepreneurs and industry leaders generous with their experience, and a network that extends well beyond the fellowship itself.

**Read the full story on our website ceri.africa*

BELOW: From left; Prof Brian Fox, Carolyn Pettersson, Celestine Nyamari, and Bill Checovich.



Stakeholder Mapping

Effective stakeholder mapping and engagement sit at the heart of impactful research. It helps researchers clearly identify, understand, and collaborate with the individuals, communities, and organisations that shape, or are shaped by, their work.

The Public Squares Initiative warmly invites you to our next lecture and workshop focused on Stakeholder Mapping & Engagement in Transdisciplinary Research, presented and facilitated by Dr. Chanelle Mulopo.

This interactive session will explore stakeholder mapping and engagement as a strategic component of transdisciplinary research, introducing practical tools for identifying and analysing stakeholders, assessing their influence and interest, and developing targeted engagement strategies. In the workshop, participants will apply these concepts to map stakeholder networks and identify opportunities to that strengthen collaboration, knowledge translation, and research impact.

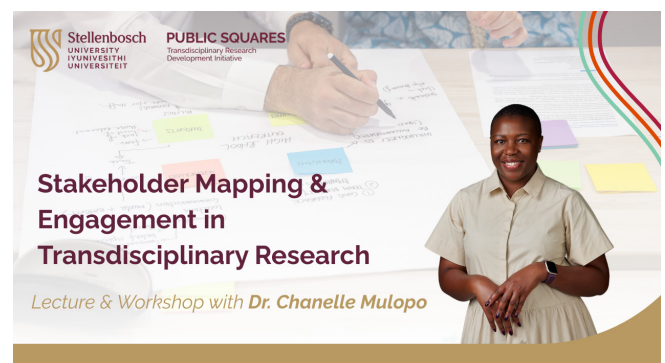
Date: 4 August 2026

Time: 09:00 - 12:00 (lunch will be served)

Venue: Rooms 1009 & 4003 Biomedical Research Institute, Tygerberg Campus, Parow

Queries: Nicala on nicala@sun.ac.za.

RSVP: <https://11nq.com/rrlp1i2>



Data, Decisions, Diagnosis

South Africa now has the most detailed picture yet of how well its cervical cancer screening programme is working – and the numbers show both a system in need of urgent repair and a clear roadmap for fixing it.

Cervical cancer is the second most common cancer among South African women, and one of the most preventable. For decades, the true state of the national screening programme was obscured by fragmented data and a habit of counting Pap smears rather than tracking the women behind them. That is changing.

At a SACEMA seminar on 10 June 2026, Dr Mazvita Muchengeti, Head of the National Cancer Registry, presented findings from the South African Cervical Cancer Screening (SACCS) Cohort – the most comprehensive national surveillance study of its kind in sub-Saharan Africa. By linking NHLS laboratory data (cytology, histology, HIV tests, CD4 counts, viral load) with National Cancer Registry diagnoses, researchers built a longitudinal record of over 8.7 million women screened between 2005 and 2023.

Unlike routine counts, this dataset can answer the questions that matter: how many unique women were reached, whether they were screened within recommended intervals, and – for women living with HIV, who need three-yearly screening – how long it took from HIV diagnosis to first screen.

Of the 8.7 million women screened, 18.1% had abnormal results – 29.1% among women living with HIV (WLHIV),

versus 11.6% among HIV-negative women, reflecting the link between HIV and HPV-driven disease.

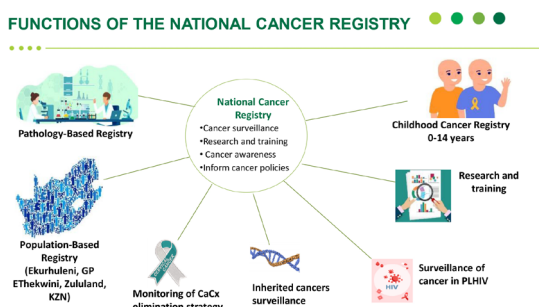
The most urgent finding: the median time between a first HIV diagnosis and a first cervical smear is 9.2 years nationally. Only 6.1% of WLHIV are screened within three months of entering HIV care, and just 21.4% within the recommended three-year window.

The Western Cape tells a different story – nearly 20% of WLHIV there are screened within three months (three times the national average), with a median time-to-screen of 3.4 years versus over nine nationally. This isn't luck; it reflects deliberate integration of screening into HIV services and stronger follow-up systems – proof the policy goals are achievable elsewhere too.

Solutions identified include automated screening prompts at HIV diagnosis, linked real-time NHLS dashboards, SMS reminders, and a unique patient identifier to track women through their full care journey. The biggest structural gap is private sector data: since SACCS only captures public lab records, women screened privately remain invisible, meaning true coverage may be higher than the data show. Closing that gap is a legal and political challenge as much as a technical one.

Education matters too. South Africa's HIV awareness campaigns saved lives; cervical cancer has never received comparable investment, and many young women don't know why they're receiving the HPV vaccine. A recent mother-daughter campaign – where vaccinated daughters brought home pamphlets urging mothers to get screened – shows how simple, low-cost interventions can work.

As Dr Muchengeti put it: “We wait for women to come to the clinic.” No system yet flags a woman's 30th birthday with a reminder to get screened. The data now exist to build one — and to make inaction harder to justify.



IDEA SMASH™ Lights the Way for Student Innovation

Stellenbosch University has officially launched IDEA SMASH™ – The Co-Creation Edition, kicking off a bold new platform for student innovators. Keynote speaker Prof Tulio de Oliveira shared insights on SWEAT Africa, setting the tone for an evening buzzing with ideas. Submissions are now open – read on to find out how your students can turn their big ideas into real-world impact.

Stellenbosch University's Centre for Student Life and Learning, in partnership with the Luister, Leef & Leer (LLL) programme, officially launched IDEA SMASH™ – The Co-Creation Edition on 20 July 2026. The evening featured a keynote address by Prof Tulio de Oliveira, who focused his talk on SWEAT Africa, with Prof Sibusiso Moyo (pictured below, left) chairing the discussion alongside student and alumni panellists. The launch marks the start of a new innovation platform aimed at cultivating the next generation of student innovators, entrepreneurs, and changemakers at Stellenbosch University.

The IDEA SMASH™ Innovation Challenge invites individual students and teams of up to four to submit a 10-slide PowerPoint pitch deck addressing a real-world problem aligned with the UN Sustainable Development Goals. Entrants – open to undergraduate and postgraduate students within the LLL programme

– are encouraged to explore challenges spanning artificial intelligence, entrepreneurship, sustainability, education, health, financial inclusion, and social innovation, with submissions assessed on problem understanding, innovation, SDG impact, market potential, feasibility, business viability, team capability, and presentation quality.

Following the 10 August 2026 submission deadline, entries will undergo initial screening before shortlisted teams move into an Industry Immersion phase, engaging with mentors and industry experts to refine their concepts ahead of the IDEA SMASH™ Innovation Showcase on 19 September 2026, where finalists will pitch to a panel of industry leaders, investors, and university stakeholders.

Organisers have thanked all who attended the launch and are calling on staff and partners to help share the Challenge Brief within their networks to encourage participation as the submission window remains open.



Reflections: From Strangers to STARS

The end of a full year's fellowship journey has arrived for the African STARS 2025 YPP cohort. The CERI fellows gathered for a session that brought both tears and laughter – a morning of honest stories, hard-won lessons, and quiet pride in how far they've come.



The African STARS YPP 2025 CERI cohort, with Prof Tulio de Oliveria, at the farewell dinner, from left: Joel Alukwe, Harries Molepo, Kennedy Mulungu, Kingstone Nihaka, Fezokuhle Khumalo, Celestine Nyamari, Grace Mwakinga, Francisca Adomako, and Kabugo Joel.

Absent: Dr Monique Barnard-Matthee.

Photo: CERI Media, Charlie Sperring.

If one thread ran through every story told that morning, it was this: the fellows' biggest takeaway was each other – the ten of them, arriving as strangers from across the continent and leaving having built a valuable network and a strong collaborative bond they look forward to honouring going forward.

Prof Cheryl Baxter, CERI's Head of Scientific Research Support and Training, kicked things off with a reminder: this session was about understanding how a year like this actually changes a life. She walked through the Mastercard Foundation's view of impact – individual, household and community, then institutions and systems – and the hope that change in one person can ripple all the way up to policy. At the core of it all: dignified, fulfilling work. Not just a paycheck, but feeling respected, doing work others respect, and having something to believe in.

Prof Lenine Liebenberg, Chief Researcher: Immunology at CERI, carried the room from there. "I feel such pride

standing here – I am so proud of you!" she told the fellows, before asking them to travel back a year in their minds: to the expectations they'd arrived with, the fears they hadn't said out loud, and then to sit, honestly, with what it actually took to get to this room today. "You arrived here as strangers from across Africa," she reminded them. "You leave as colleagues, collaborators, and friends." The session then unfolded in five movements – Looking Back, Looking Inward, Looking Outward, Celebrating Each Other, and Looking Forward – each one peeling back another layer of the year.

Looking back meant walking the arc of the programme again – chatting about the modules and their highlights and challenges. The humorous memories surfaced fast: Fezo's hard-won takeaway from her TV training was blunt: "do not wear stripes!" Grace learnt the hard way the value of preparing thoroughly before any conversation that matters. But it was LaunchLab that pulled the sharpest reflections out, with all fellows agreeing how much they had grown during this process: arriving knowing nothing, and leaving able to speak with real confidence and clarity

before pitching their ideas to relevant stakeholders.

In smaller groups, fellows traded the moments that had changed how they think, the ones that made them laugh hardest, and the people who'd shaped them most. One group arrived at something close to a mission statement: "All of us are determined to make a change." Another spoke about the sheer humility of being surrounded by brilliant peers and mentors, and how completely they'd been welcomed into a culture that wasn't their own.

Turning inward made the conversation more private. In a "Letters to Your Past Self" exercise, each fellow wrote to the person who'd arrived exactly a year earlier – sealed away to be reopened in another year's time. Kabugo's takeout landed hard in the room: "What is the cost of not doing something?" Kingstone's was quieter: "The journey is more important than the destination."

Looking outward pushed the conversation past the individual entirely, using the Mastercard Foundation's own framework for dignified and fulfilling work as a lens. In small groups, fellows traced the ripple effect of the fellowship across four connected circles – Me, My Community, My Institution, Africa – and the stories that emerged went well beyond personal growth. The fellows agreed that this year had pulled their gaze upward, toward community, national, and continental scale. As Joel A put it: "My outlook has changed. I want to see how I can contribute to the bigger problems in Africa."

Asked what should never change about the programme, the answers came thick and fast: the constant affirmations, the facilitators, the collaborative spirit that runs through everything, the industry placement and mentorship, the sheer diversity of young Africans in one room, the LaunchLab experience, and the range of modules that exposed fellows to things they'd never otherwise have encountered. Asked what could make it even better for the next cohort, the wish list was practical and specific: funding to carry projects past the fellowship itself, more support once a fellow's residency ends, and a longer bioinformatics module.

Celebrating each other came easily, too – Franca thanking Harris for rushing her to the ER when she fell ill, Kennedy thanking Celestine for feeding the whole group, and Grace crediting Joel A with teaching her punctuality. Kingstone highlighted how the closeness this cohort built over shared accommodation, communal meals, and a year of working side by side had become as valuable as anything on the curriculum. His challenge, to the programme and to future cohorts, was to be intentional about building that same closeness from day one.

Looking forward, fellows imagined the headline they'd want written about themselves in five years' time, and finished one last sentence: "Because of African STARS, I will..."

That's the real measure of this first cohort – not the modules completed or the grants won, but a group of near-strangers who now call each other colleagues, collaborators, and friends.

**The African STARS Fellowship is brought together by the Centre for Epidemic Response and Innovation (CERI) at Stellenbosch University and Center for Africa's Resilience to Epidemics (CARE) at the Institut Pasteur de Dakar (IPD), in partnership with the Mastercard Foundation.*

Farewell Dinner

The YPP 2025 cohort marked the close of their programme with a farewell dinner held at Spier Hotel, bringing together fellows, mentors, and programme staff to celebrate the journey as the organisers prepare to welcome 50 more fellows from 20 countries across Africa.

Mentors from the various fellowship projects took to the floor to share their final words, reflecting on the growth, dedication, and calibre of the fellows they had guided throughout the programme. Their remarks underscored the importance of the fellows' contributions and the impact of their work, and each mentor extended warm wishes for the fellows' future endeavours.

Fellows received certificates and trophies marking the completion of the programme, and each signed their name on the African STARS pledge map, committing to the fellowship's pledge: "As an African STARS fellow, I pledge to lead with science, serve with purpose, and build a healthier Africa."

The evening carried a tone of celebration and reflection, honouring the bonds formed across borders and disciplines, and reaffirming that the STARS network extends well beyond the programme itself. Fellows were encouraged to remain connected as alumni, carrying forward the relationships and knowledge built during their time with STARS.

**"One star
shines brightly.
A constellation
changes the night
sky. Because of you,
the programme
continues!"**

– Prof Lenine Liebenberg

Continuous Learning

Two of our African MBA in Healthcare STARS tell us what the fellowship has taught them so far.

photos: Supplied

Dr Juandré Kloppe

My STARS fellowship and MBA in Healthcare has so far not only equipped me with technical business knowledge, but also given me transferable skills that I can use to become a more effective clinician, researcher and leader. Statistics has helped me think more clearly about research and data. Economics and Accounting has helped me understand resources, sustainability and decision-making. Strategy, operations, and organisational behaviour have helped me understand how complex systems work, and how people can be supported to perform better within them. Through my classes, studying and projects, I have developed a broader understanding of the systems that shape patient care, and how I can better support both my team and my patients. For me, the STARS journey has done much more than send me to “business school”. It is equipping me with a network and skills that I can bring together with my clinical background and training to become a better researcher, clinician, and more effective part of the greater healthcare system.



Teopolina Ihuhua

Becoming an MBA STARS fellow has been both an exciting and transformative journey. I began this experience believing that my previous academic and professional background had prepared me well, but I quickly realised that the programme demands much more. It requires persistence, continuous learning, curiosity, and a willingness to be challenged.

Even in this first year of the MBA, I can already see how the programme is reshaping the way I think about leadership, systems, and creating impact. I am especially looking forward to our second year, where we will focus on healthcare, a sector I strongly believe is critical to Africa's future.

Beyond academics, the fellowship has expanded my network and continues to shape both my personal and professional growth. I remain deeply grateful to the Mastercard Foundation and African STARS for this life-changing opportunity.



Teaching Africa to Compete Globally

On March 4 this year, Grace Bosco watched her own face appear on the Nasdaq Tower in Times Square – a name and a company logo, up in lights, next to just nine others chosen from thousands of entrepreneurs worldwide.

text: Katrine Anker-Nilssen photos: CERI Media, Charlie Sperring & Supplied

Grace arrived at the Centre for Epidemic Response and Innovation (CERI) as an African STARS YPP fellow in August 2025, and was already building something ambitious: a startup using seaweed to capture carbon dioxide at five to ten times the rate of land plants, then turning that seaweed into high-value agricultural products.

Grace's company, SAB Biomanufactures, is developing carbon-cure solutions rooted in seaweed cultivation – a business that sits at the intersection of climate innovation and agricultural value creation. It's exactly the kind of work the Nasdaq Entrepreneurial Center's Winter 2026 Milestone Makers cohort was built for: a themed round supporting entrepreneurs building scalable solutions in clean tech, environmental sustainability, and the transition away from carbon-heavy industry.

Grace heard about the programme through her entrepreneurship network and applied on the strength of a simple ambition – to grow not just her business, but herself, as a founder and a leader. It was a competitive door to walk through: Milestone Makers selected just 10 entrepreneurs globally out of more than 4 000 applicants, the majority of them from the U.S. What set her application apart, she believes, was its clarity – a real environmental and agricultural challenge, tied directly to opportunity for local communities. "My passion and dedication came through in my application," she says.

Over 12 weeks, from December 2, 2025 to March 3, 2026, Grace worked toward a single defining milestone: strengthening SAB Biomanufactures' growth strategy and building relationships with bigger stakeholders and investors. She was paired with a dedicated business and life coach, and mentored directly by an investor and tech founder named a 2025 Visionary of the Year, alongside a venture capital professional with a background spanning Apple, Samsung, and the Forbes Communications Council.

This milestone wasn't just a checkbox. "What we are building in Tanzania," Grace says, "can create impact far beyond our borders."

The Times Square feature itself is no small gesture – graduates are given a spot on the tower reserved for a display that costs upwards of 10 000 USD to secure. Grace and her fellow graduates were celebrated live over video by the CEO of the Nasdaq Entrepreneurial Center and programme sponsors. She couldn't be there to see her own photo and company logo go up in person, but she felt every bit of it. "It gave me more motivation," she says, "to keep building solutions that can impact Africa."

Selection into Milestone Makers came with more than a moment of recognition. Grace now holds lifetime membership in the Nasdaq entrepreneurial community – access to annual summits, ongoing mentorship, and



a global network of founders she can call on as SAB Biomanufactures grows. She has already cleared the interview stage for grant funding and investor access, with her next step being to hit the growth milestones investors are watching for.

Grace is clear that none of this happened in isolation. She completed the Nasdaq program while an active African STARS fellow at CERi – and it was the fellowship, she says, that made full participation possible. “The fellowship gave me the time, the space, and the environment to show up fully – to attend every session, hit every milestone, and never miss a deadline. And we were constantly encouraged: apply anyway, no matter how big the opportunity seems.”

Beyond the practical support, Grace points to something less tangible but just as important: the leadership, entrepreneurship, and personal development grounding the fellowship gave her – skills she now carries back to Tanzania as she scales her business.

Grace's story is a clear thread from individual investment to something larger. At the individual level, she describes new confidence in decision-making and in speaking with investors – a direct shift in the kind of purposeful, dignified work the fellowship aims to create. At the community and institutional level, her ambitions are explicit: growing SAB Biomanufactures means growing local supply chains around seaweed cultivation in Tanzania, and, if the investor conversations she's now in convert, creating employment for youth and women in her home country.

As Grace puts it: “This fellowship is helping founders like me learn how to compete in global opportunities – which will lead to creating employment for youth and women in Africa.”



From Fellowship to Frontline

Distance from the outbreak became his greatest advantage – connecting Uganda's Ebola responders to the funders who could save lives.

text: Katrine Anker-Nilssen
photo: CERi Media



When the World Health Organization declared the Bundibugyo Ebola virus disease outbreak a Public Health Emergency of

International Concern on 17 May 2026, Kabugo Joel was thousands of kilometres from the outbreak's epicentre – not in Kampala, where cases were emerging in some of Uganda's most densely populated districts, but in Stellenbosch, South Africa, at CERi, nearing the end of a year as an African STARS YPP fellow. On paper this distance might have made him a bystander to the crisis unfolding in his home country, but in reality it placed him exactly where the response needed him most.

Kabugo's journey in science began over a decade earlier, with degrees in Biomedical Laboratory Technology and Clinical Immunology from Makerere University. In October 2016, he joined the Uganda National Tuberculosis Reference Laboratory as a laboratory scientist – the start of a career spent inside the country's central public health laboratory system. He later rose to technical lead of Uganda's National Health Laboratory Diagnostic Services (NHLDS) Technical Working Group on Operational Research and Innovations, in 2023.

What drew him to public health, he says, was a simple but urgent realisation: laboratories are not support functions on the sidelines of disease control – they are the front line. “In Uganda alone, over twenty disease outbreaks have been documented in the last five years, including those caused by emerging and re-emerging infectious agents,” Kabugo explains.

Kabugo's career had already built the technical foundation, but it was the African STARS Fellowship that gave him the network, the exposure, and – as it would

turn out – the timing to make a huge impact during a national emergency. “The fellowship has expanded my network and enabled resource mobilisation,” he says. Beyond connecting him to funders and collaborators across the health research landscape, the fellowship immersed him in genomics training and outbreak response modules, sharpening skills he didn’t yet know he would need so urgently.

“My placement at CERI positioned me within an institution actively engaged in epidemic and pandemic preparedness and response across the continent,” he says, “giving me visibility into funding mechanisms and partner networks that simply aren’t accessible from within a national system alone.” Kabugo learnt of the Ebola outbreak the way public health professionals often do – not through breaking news, but through routine institutional surveillance meetings. From there, distance became both the challenge and, unexpectedly, the advantage.

Coordinating Uganda’s emergency needs from South Africa was not simple. “It required me to maintain communication with the team on the ground, which was quite hard,” he recalls, “given how stretched key personnel were across emergency meetings and response activities”.

Real-time updates were hard to come by. But being at CERI meant Kabugo could see something the team on the ground, buried in the immediacy of the response, could not: a bridge. “This positioning created a quick link to identify CERI as a bridge between NHLDS-MoH’s outbreak response needs and potential funders,” he says. Through that connection, CERI convened a resource mobilisation meeting with more than twenty funders – and the ELMA Foundation stepped forward to support the supply of diagnostic testing kits.

With an imported outbreak and a narrowing window to act, Kabugo and his team drew on institutional memory – comparisons to the 2022/2023 Sudan-Ebola outbreak



and an audit of current stock levels – to build the needs analysis behind his concept proposal. As the link between CERI’s resource-mobilisation efforts and the NHLDS-MoH team on the ground, he translated Kampala’s priorities into a case compelling enough to move funders like the ELMA Foundation to act. It was not fast. “Delays were experienced in the acquisition of the grant, and over seven weeks have so far been taken, with shipment expected to happen next week,” Kabugo notes. “Coordination away from the ground is hard, and resourcing delays were a constant worry, since Ebola spreads quickly and any delay could cost lives.”

For Kabugo, this response has sharpened the Technical Working Group’s core purpose and drive to advance focus on pandemics and surveillance of emerging and re-emerging outbreaks. Looking ahead, he’s already thinking about what a more proactive posture could look like: routine genomic surveillance of wastewater, a collaborative one-health approach across the region, and – critically – a shift from retrospective planning to real-time operational readiness.

Kabugo also sees this response as a foundation to build on. Real resilience, he says, will come from sustained one-health surveillance across high-risk border districts, additional BSL-3 satellite laboratory capacity, and a steady supply chain for diagnostics and PPE – building the infrastructure to see the next crisis coming, not just respond to it.

However, he feels the collaboration and the links established through this fellowship lay a ground for continued collaboration, including training, consulting consortiums, and sharing of resources in future and current epidemics. “This sets the stage for future response to outbreaks,” he notes.

Looking back, from Makerere lecture halls to a national TB reference laboratory to a fellowship desk in Stellenbosch to a live PHEIC response, Kabugo sees a clear throughline. “The African STARS fellowship placed me at the intersection of applied epidemic science and international partnership-building at precisely the moment Africa needed both,” he says. “It has reinforced my career path bridging laboratory diagnostics, operational research, and health systems strengthening.”

And Kabugo isn’t finished yet. He plans to complete his doctoral studies while growing NHLDS’s research and innovation function and deepening the partnerships that made this response possible. As he puts it, his goal is to help “translate African health biotechnology innovations into practical solutions that address patient care challenges across the continent.”

For a fellowship built on the premise that Africa’s brightest scientific minds deserve a global stage and a global network – Kabugo Joel’s story is proof of what’s possible.

Media Coverage

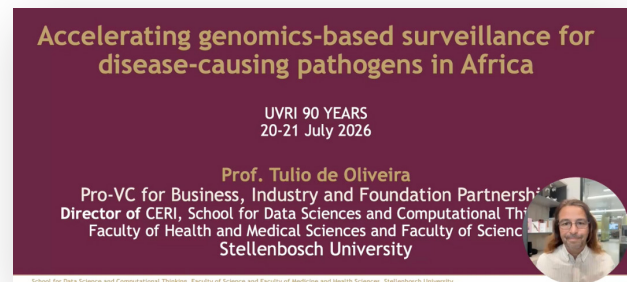
Our work showcased in videos and featured on radio/TV.

UVRI Keynote

The Uganda Virus Research Institute (UVRI), a leading epidemic response institute in Africa, celebrated its 90th anniversary on 20-21 July. In this presentation, Prof Tulio de Oliveira discusses how genomics, biotechnology, and AI are driving Africa's epidemic response and enabling diagnostics, therapeutics, and vaccines for diseases like Malaria, Rift Valley Fever, Dengue, Hantavirus, and Ebola.

Watch the full video here:

<https://www.youtube.com/watch?v=YWeB6v7DwIU>



BRAIN 5.0 Regional Bootcamp

The BRAIN 5.0 Regional Bootcamp brought together pan-African founders building science-based ventures with a cross-continental circle of experts and investors focused on market and investment readiness. It was a two-way exchange. Founders got challenged on positioning, customer reality, and go-to-market strategy. Experts gained real market context from the cohort. The result: honest, rigorous work that DeepTech demands.

Watch the full video here:

<https://www.youtube.com/watch?v=6vq6cohq16Y>

Newsroom Africa Interview: Ebola Outbreak

Following reports of an Ebola outbreak in the Democratic Republic of Congo, Prof Tulio de Oliveira, Director of the Centre for Epidemic Response and Innovation (CERI), joined Newsroom Africa to assess South Africa's level of risk and readiness. This video is shared with credit to Newsroom Africa, where the interview originally aired.

Watch the full video here:

<https://www.youtube.com/watch?v=FnW4ogo2VJc>



Extreme Weather and Mental Health

Climate change is often framed as floods, droughts, and heatwaves. But how often is its impact on the mind part of that conversation?

In this digital story, Sbongakonke shares his lived experience of extreme weather and its toll on mental health. Created as part of the WEMA Project (Weather Events and Mental Health Analysis), this story is not just a narrative. It is data, evidence, and a call to action.

Watch the full video here:

<https://www.youtube.com/watch?v=gWKfbdH9fRU>



eNCA Interview: Ebola Outbreak

In this interview, the main anchor of eNCA, which is the largest news focused TV in South Africa, interview Prof Tulio de Oliveira about the the Ebola Outbreak in DRC in 2026. The Epidemic of Ebola Disease caused by Bundibugyo virus in the Democratic Republic of the Congo and Uganda in 2026 was determined a public health emergency of global concern by the WHO and the Africa CDC.

Watch the full video here: https://www.youtube.com/watch?v=hA_vgX-AXvs&t=5s

Mandela's Legacy Webinar

Prof Tulio de Oliveira's talk, "The Power of Diversity: Science Doesn't Know Any Borders," links diversity to scientific progress, citing his own international team's COVID-19 discoveries and urging South Africa to welcome more global talent. He recently received the Order of Mapungubwe in Gold for his pandemic work.

Watch the full video here:

<https://www.youtube.com/watch?v=Bea0iLOGdD4>



The Future of Genomics is Being Shaped in Africa



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