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genomics, epidemics
& microbes

the gem

Women Shaping Science

Designing research that works in real life

When Lineages Return

Hidden viral evolution reveals gaps in surveillance

AI Supporting Healthcare

Strengthening decisions across constrained systems

summary

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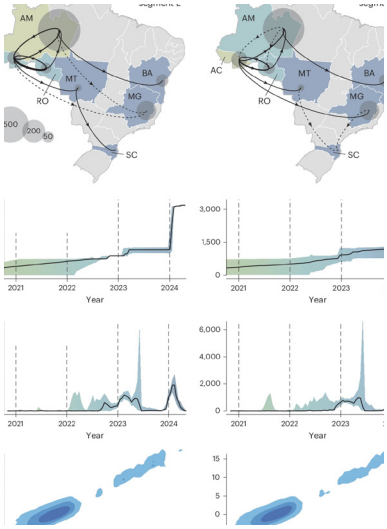

Oropouche's Expansion

A virus once largely confined to the Amazon is now spreading across Brazil, placing millions at risk. New research shows how environmental conditions and transmission patterns have enabled this shift, revealing both how the outbreak unfolded and where it may move next.

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Beyond the Diagnostics

For Marième Samb Traoré, the African STARS Fellowship did more than build scientific expertise. It sharpened a clear focus on how innovation moves beyond the lab, reinforcing the need for solutions that are practical, scalable, and designed for real-world health systems across Africa.

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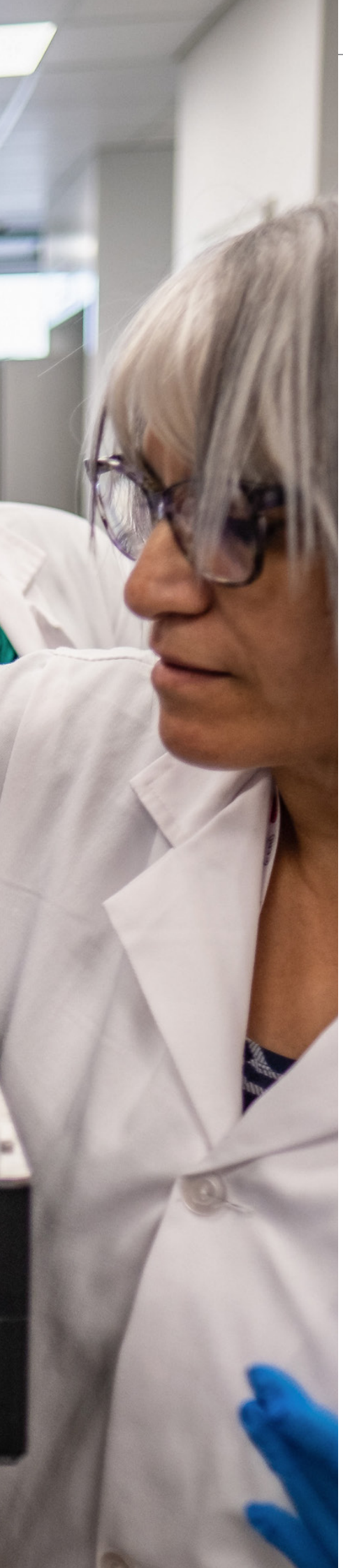
Rethinking How Research Works

Engaged research is reshaping how global health challenges are understood and addressed by bringing communities into every stage of the process. At CERI, this approach is helping to build more grounded, context-driven solutions for climate and infectious disease risks in vulnerable settings.



editorial

How do we turn science into impact? Across this issue, a consistent thread emerges: scientific progress alone is not enough. What matters is how that science is applied, translated, and embedded into real systems that can shape policy, strengthen healthcare, inform decision-making, and ultimately improve people's lives. And this is visible at multiple scales.

At the molecular level, the re-emergence of a SARS-CoV-2 lineage once thought extinct shows how pathogens continue to evolve beyond the limits of surveillance, reinforcing the need for sustained genomic monitoring. At the population level, new insights into Oropouche virus expansion and HIV drug resistance show how data, when analysed across regions and contexts, can directly shape public health response.

This issue of **the gem** magazine also moves beyond detection and analysis. Several pieces point to a more complex challenge: how to ensure that knowledge becomes usable.

In Brazil, training and network-building efforts demonstrate how genomics can shift from a research tool to a routine part of clinical and public health systems. The SACEMA Policy Modelling Fellowship shows the same principle in a different form, placing data directly in the hands of those working with policymakers – where it can inform decisions on vaccination, immunity, and outbreak risk.

A similar shift is visible in the African STARS Fellowship stories. Here, the focus extends beyond scientific development to implementation, entrepreneurship, and scale. The message is consistent: innovation that does not reach systems, markets, or communities does not achieve impact.

This is echoed strongly in work on women's health and engaged research. Scientific knowledge, no matter how robust, cannot drive change if it does not align with lived realities. Silence, stigma, and structural barriers limit what people are able to act on. Designing research with communities, rather than for them, becomes essential to closing that gap.

The same principle applies to emerging technologies. Discussions on artificial intelligence highlight both its current value and its limitations. AI can extend the reach of health systems, but only where data is reliable, governance is clear, and inequities are actively addressed.

At CERI, this work continues to centre on a clear objective: ensuring that advances in genomics, data science, and public health translate into outcomes that are practical, equitable, and sustained.

text:
Tulio de Oliveira

When Lineages Reappear

A SARS-CoV-2 lineage once thought extinct has re-emerged after more than two years – revealing how the virus can evolve undetected and return with significant genetic change.

text:
Graeme Dor

Remember when Omicron was first detected in South Africa in late 2021?

Three lineages emerged almost simultaneously: BA.1, BA.2, and BA.3. While BA.1 drove the initial global wave, it was BA.2 that persisted and ultimately gave rise to most of the lineages circulating today. BA.3, in contrast, appeared to fade. After mid-2022, it was no longer detected, and was largely considered an evolutionary dead-end.

More than two years later, in November 2024, a highly divergent descendant of BA.3, designated BA.3.2, was identified in South Africa. What makes this lineage unusual is not just its reappearance, but how it re-emerged, on a long evolutionary branch, with no intermediate genomes detected. This suggests a prolonged period of undetected evolution, followed by sudden re-entry into the sampled population.

This matters because it highlights a pathway of viral evolution that is difficult to observe in real-time. Rather than accumulating changes gradually under continuous surveillance, lineages like BA.3.2 may evolve in relative isolation, such as in chronically infected individuals, before re-emerging with substantial genetic differences.

Despite low circulation through much of 2025, BA.3.2 spread globally and began increasing in multiple regions towards the end of the year. By early 2026, it had been detected across multiple continents, reaching notable proportions in some countries (Figure 1) . Genetically, it carries extensive changes in the spike protein, including key mutations (Figure 2) associated with immune escape and receptor binding, raising the possibility of altered biological properties that could enhance its spread. In many settings, it has also been observed more frequently in children, potentially reflecting interactions between its mutational profile and existing patterns of population immunity.

For public health, the key insight is not just the emergence of BA.3.2 itself, but what it represents. Even as dominant SARS-CoV-2 lineages continue to circulate globally, divergent variants can evolve in parallel and reappear unexpectedly.

This discovery also reinforces the critical role of genomic surveillance in southern Africa. The detection of BA.3.2 reflects sustained sequencing efforts in the region, which remain essential for identifying and characterising emerging variants before they spread more widely.

As SARS-CoV-2 continues to evolve, BA.3.2 highlights an important ongoing risk, that seemingly extinct lineages may not be gone, but instead evolving out of sight, with the potential to re-emerge under the right conditions.

For acces to the full publication, visit https://doi.org/10.1093/ve/veag016

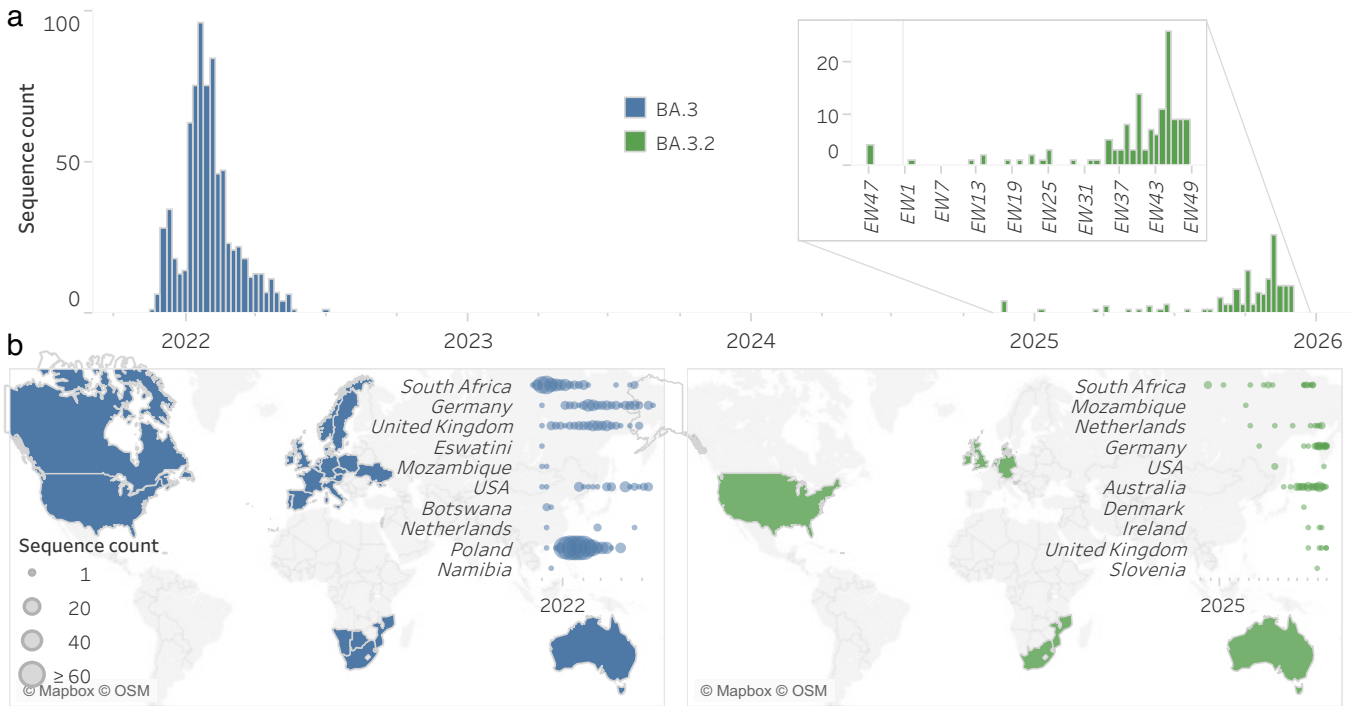
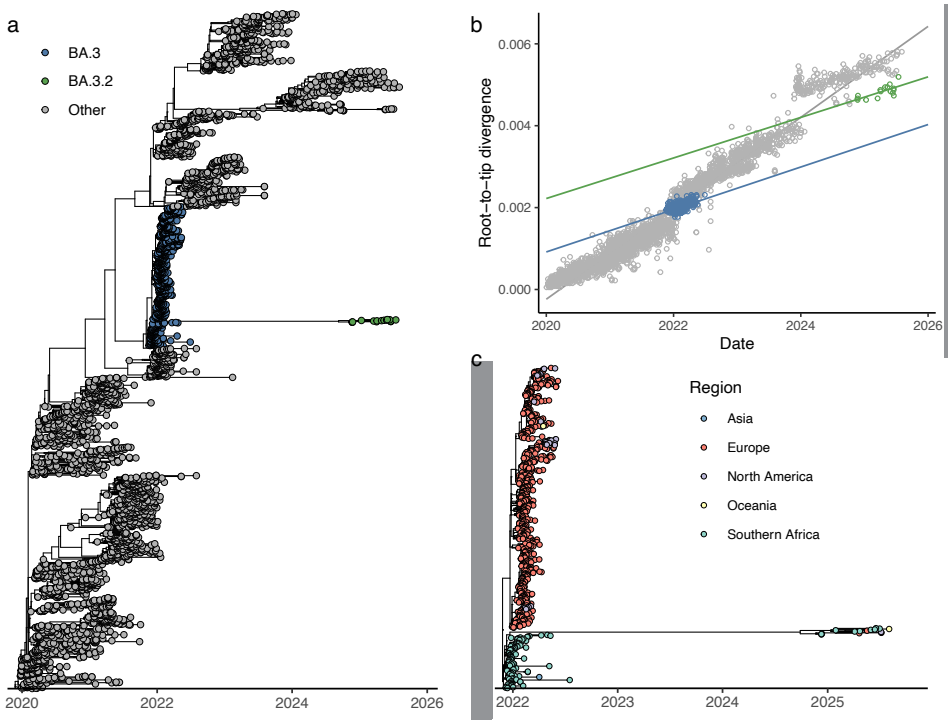


Figure 1 (above): *Weekly spatio-temporal genomic distribution of BA.3 lineages globally. (a) Time-series distribution of BA.3 sequences by epidemiological week (EW), stratified by Pango lineage (BA.3 shown in blue, BA.3.2 shown in green). The inset provides an expanded view beginning from the first detection of BA.3.2 in November 2024. (b) Geographic distribution of BA.3 (blue) and BA.3.2 (green) detections, with dot plots reflecting weekly sequence counts for each country. Countries are ordered by the date of first detection, and limited to the ten earliest-reporting countries.*

Figure 2 (below): *Phylogenetic analysis of BA.3 lineages in the context of globally subsampled sequences. (a) Time-scaled phylogeny of all BA.3 sequences within a globally representative subset of SARS-CoV-2 sequences (grey), highlighting the long branch separating parental BA.3 sequences (blue) from the more recently emerged BA.3.2 cluster (green). (b) Root-to-tip analysis of high-quality BA.3 sequences within a globally representative subset of SARS-CoV-2 sequences, with ordinary least squares regression lines plotted against the BA.3 parent lineage (blue) and BA.3.2 lineage (green) respectively, highlighting the divergence in projected vs observed number of mutations. (c) Expanded view of the BA.3.2 lineage branching from the BA.3 parent clade, coloured by region, illustrating the phylogenetic relationship between BA.3.2 sequences and the broader BA.3 lineage.*



Beyond Artificial Intelligence

Shaping the future of scientific discovery in South Africa.

text: **Katrine Anker-Nilssen** photo: **CERI Media**

The first Thought Leader Lecture of 2026, held on 8 April at the Stellenbosch University Alumni Clubhouse, brought together Prof de Oliveira and Prof Rajaratnam to explore the role of artificial intelligence (AI) in scientific discovery and public health in South Africa.

AI is often framed as a future breakthrough. But at this lecture, the focus was slightly different – centring on what AI is already doing, and what it means for public health in South Africa right now.

Hosted in partnership with Investec, the session brought together leading voices in genomics and data science, creating a space where academic insight, industry expertise, and real-world challenges came together. As Alfreda Coetzee, Manager: Stewardship of Individual Donors, Development and Alumni Relations, explained, "The Thought Leader Lecture series aims to create a platform where academic insight, industry expertise, and societal challenges intersect to shape meaningful public dialogue."

Reflecting on the lecture, Prof de Oliveira described it as very exciting, noting that "we discussed some applications of AI in science, but in a very focused approach." One example brought this into sharp focus.

He shared the story of Lucy, a dog diagnosed with cancer and given only months to live. Using AI alongside genomics and bioinformatics, researchers sequenced the tumour, identified key mutations, and incorporated these into a targeted mRNA-based intervention. The outcome was striking – the dog is still alive.

For Prof de Oliveira, the significance extended beyond a single case. "It is interesting to see how not only AI, but the fields that we work in at the Centre for Epidemic Response and Innovation (CERI), can intersect quite strongly," he noted. The example reflected a broader shift, where advances were increasingly driven by the integration of disciplines rather than isolated breakthroughs.

At the centre of the discussion was a clear message: AI is not a distant concept, but a present-day tool already extending the reach of overstretched health systems. In South Africa, this is taking shape across diagnostics, predictive analysis, and disease surveillance, where both speed and scale are critical.

Prof Rajaratnam underscored this, noting that "AI has the opportunity to extend the reach of overstretched health systems rather than replacing them." Rather than substituting healthcare professionals, AI is emerging as a support layer – strengthening decision-making, streamlining processes, and enabling more efficient use of limited resources.

This potential, however, is closely tied to the systems it depends on. A central challenge is data. AI requires large volumes of high-quality, well-structured data to function effectively, yet this remains uneven across the South African health landscape. As Prof Rajaratnam pointed out, "AI needs good data, but good data is exactly what's scarce." While national registries and digital health record initiatives are beginning to

build this foundation, progress remains inconsistent, particularly across the public–private divide.

This creates a tension between opportunity and risk. On one hand, AI offers a pathway to broader access – delivering advanced diagnostics and early warning capabilities to communities that may otherwise be underserved. On the other, there is a risk that these systems replicate existing inequalities. “Algorithms trained on historically unequal data quietly encode that inequality into clinical decisions,” Prof Rajaratnam warned, highlighting how bias can be embedded and scaled if not actively addressed.

These concerns extend beyond technology into governance. With South Africa’s national AI policy still in draft form, the frameworks needed to guide responsible implementation are evolving. Questions around data use, consent, and accountability remain central, particularly in a public health context where the stakes are high.

At the same time, there is a growing shift towards more human-centred approaches globally. Conversations emerging from platforms such as the G20 are beginning to shape how AI is governed and applied, but translating these principles into practice will require coordinated effort across research, policy, and industry.

Looking ahead, the potential impact of AI extends well beyond current applications. “AI will have the biggest impact not only in epidemics, but also in personalised medicine,” said Prof de Oliveira, pointing to the ability to design a specific vaccine or treatment for the cancer an individual has, rather than a generalised approach. This shift could improve efficiency and outcomes, while also supporting the development of therapies with lower toxicities. At the same time, AI will play an increasingly important role in helping to “predict and prepare for epidemics,” strengthening early warning systems and response strategies.

Beyond the technology itself, the value of the Thought Leader Lecture series lies in its ability to connect these ideas to broader systems. These are not isolated discussions, but part of an ongoing effort to align research, policy, and practice. As Coetzee noted, “The platform aims to spark meaningful conversations about real-world challenges, and over time inspire practical ideas, collaboration, and informed decision-making that can drive positive change.”

In a country navigating both complex health challenges and rapid technological change, this kind of engagement is essential. It ensures that innovation is not only advanced, but understood, shaped, and applied in ways that are relevant to the realities on the ground.

Strengthening Genomic Surveillance Across Continents

CERI's engagement in Brazil highlights a growing commitment to advancing genomic surveillance in high-burden settings. Through training, collaboration, and new national networks, this work is translating genomics into real public health impact.

text: **Emilyn Costa Conceição** **photos:** **Supplied**

In December 2025, I travelled to Brazil to lead a series of high-impact training and research activities under two major initiatives: REVIGET (Genomic Surveillance Network for Tuberculosis) and REVIGEN (Genomic Network for Precision Medicine and Surveillance of High-Prevalence Infectious Diseases). These engagements reflect CERI's growing role in advancing genomic surveillance and precision public health in high-burden settings across the Global South.

I began the journey in Rio de Janeiro, at the Fiocruz/INI (Oswaldo Cruz Foundation National Institute of Infectious Diseases Evandro Chagas), where I contributed to an intensive workshop on integrated tuberculosis diagnostics under the REVIGET consortium. The programme bridged classical microbiology, molecular diagnostics, and whole-genome sequencing (WGS), with a strong emphasis on real-world laboratory challenges led by Cristina Lourenço, Head of the Laboratory of Bacteriology and Bioassays in Tuberculosis and other Mycobacteria, a regional reference laboratory in Mycobacteria.

My sessions focused on WGS as a transformative tool for tuberculosis management, covering DNA extraction, library preparation, sequencing workflows, and bioinformatics interpretation. I aimed to reinforce how genomics can shift clinical decision-making from empirical to precision-based approaches.

From the southeast, I travelled north to Belém, the capital of Pará state, where my activities expanded under both the REVIGET and REVIGEN frameworks. I led a dedicated workshop titled "From Genomics to Clinic: Applying the World Health Organization Mutation Catalogue in Tuberculosis Management", which brought together clinicians and researchers to co-create solutions for implementing genomic data in routine care.

The training combined foundational concepts with hands-on, co-creation sessions, including the development of genomic-based clinical reports and Portuguese-language resources to support broader adoption in Brazil's Unified Health System (SUS). This participatory model reflects a core principle of our approach at CERI: building sustainable, locally owned capacity.

During the clinical WGS training, I was honoured with a Certificate of Recognition from the Instituto Evandro Chagas, awarded through its Bacteriology Section. This distinction acknowledges scientific excellence, dedication, and contributions to advancing research, surveillance, and innovation in infectious diseases. It also reflects a commitment to capacity building and collaborative science, which continues to strengthen genomic surveillance and public health systems across regions.

To me, this recognition represents not only an individual milestone, but also the growing impact of international

partnerships between Brazil and South Africa, particularly through initiatives such as REVIGET and REVIGEN. It reinforces how science, when driven by collaboration and purpose, can leave a lasting legacy in transforming public health.

A major highlight of the visit was the REVIGEN "Marco Zero" meeting at the Instituto Evandro Chagas, which marked the formal launch of a national genomic network focused on high-prevalence infectious diseases. I co-led this initiative with Prof Karla Lima from the Instituto Evandro Chagas. Together, we are bringing multiple institutions across Brazil into a shared effort to integrate genomic, epidemiological, and clinical data for diseases such as tuberculosis, arboviruses, respiratory viruses, parasitic infections, and antimicrobial-resistant pathogens.

The programme outlined structured work packages spanning laboratory systems, bioinformatics, ethics, and data integration, laying the foundation for a scalable, interoperable surveillance ecosystem.

Beyond the December activities, from March to April 2026, I have been actively engaged in coordinating the strategic development of REVIGEN. Together with Prof Karla Lima, I am leading efforts to consolidate national and international partnerships, align project work packages, and strengthen collaborative frameworks across participating institutions.

These efforts are critical to ensuring the long-term sustainability, scalability, and impact of the network.

These engagements underscore our strategic commitment at CERI to embedding genomics into routine public health practice, particularly in regions disproportionately affected by infectious diseases and antimicrobial resistance. By aligning research, training, and implementation, initiatives such as REVIGET and REVIGEN are helping to translate cutting-edge science into tangible health impact.

As genomic technologies become increasingly central to epidemic preparedness and response, I believe collaborations like these will be critical in ensuring that innovation is not only advanced, but also equitable, accessible, and locally meaningful.

NEW PUBLICATION:

Standardising TB Genome Sequencing from Mycobacteria Growth Indicator Tube (MGIT) Cultures

A new study by GenPath Africa consortium members, including Emilyn Costa Conceição and colleagues from Stellenbosch University and the University of Antwerp, provides practical guidance to support the adoption of whole-genome sequencing (WGS) for tuberculosis (TB) using Mycobacteria Growth Indicator Tube (MGIT) cultures. Analysing 15 studies and over 1,000 datasets, the research shows that more than 96% of samples met quality standards, demonstrating that clinical primary culture (CPC)-based WGS is robust, feasible, and suitable for routine use.

The study identifies sequencing cycles as the key factor influencing data quality, rather than more complex laboratory steps, and recommends standardising workflows to improve consistency and reduce costs. By supporting simpler, scalable approaches, this work can accelerate drug-resistant TB detection, strengthen outbreak tracking, and expand equitable access to genomic tools in high-burden settings.

Access the full publication via this link:
https://www.microbiologyresearch.org/content/journal/mgen/10.1099/mgen.0.001565

Turning Data into Public Health Decisions

A new cohort of African fellows is turning epidemiological data into practical decisions – from vaccination strategy to outbreak risk – working directly with policymakers in their own countries. At a time of uncertain funding and rising pressure on health systems, the SACEMA Policy Modelling Fellowship shows how locally driven, data-led insight can protect and strengthen public health across the continent.

text: **Jeremy Bingham & Shadé Horn** photos: **Supplied**

The vision of the SACEMA Policy Modelling Fellowship is to foster a more informed, agile response to epidemics in Africa in which interventions are backed, where possible, by widely available data. We are building towards a future where key epidemiological analysis and modelling takes place in-country and is driven by close relationships between policy makers and government-affiliated analysts.

Through the 10-month fellowship, SACEMA trains, mentors, and supports fellows to develop modelling insights with real-world impact. Fellows focus on vaccination programme optimisation, population immunity estimation, and outbreak risk analysis, developing and delivering modelling insights in conversation with government stakeholders and decision makers. The fellowship is a journey of collaboration between the fellowship coordination team at SACEMA, AIMS Senegal, and the fellows themselves. While the fellowship coordination team leads the training and model selection aspect of the work, the fellows are the key players in their engagement with stakeholders. Only working together can we achieve our mission.

The SACEMA Policy Modelling Fellowship prepares fellows to provide key insights to decision makers, including insights related to vaccination planning and decision making in resource-constrained scenarios. For example, fellows have the opportunity to examine the age profiles of measles and polio immunity in their countries, bringing together a range of datasets, and to estimate the effectiveness of different supplemental immunisation activities.

The third cohort of SACEMA Policy Modelling fellows are currently hard at work. Fellows are engaging with stakeholders in their home countries, across Africa, to identify appropriate policy questions, access key epidemiological data, and build relationships for ongoing collaboration.

Simultaneously, each fellow is working through a personalised series of courses, reading papers, attending talks, and engaging in group discussions, all aimed at strengthening their technical skills and expanding their epidemiological knowledge. The 2026 cohort consists of 8 fellows from Nigeria (2), Ethiopia (2), Mozambique (2), Kenya, and DRC, with five fellows focused on measles and three fellows focused on polio.

As the global community marked World Immunisation Week (24–30 April), the urgency of this work is clear. International funding for vaccination and public health has become increasingly uncertain, and we must collectively face the fact that the substantial progress made to combat serious vaccine-preventable diseases, such as measles and polio, is not guaranteed, and is maintained only by sustained effort. The value of data-driven targeting, prioritisation, and planning to maintain or increase effectiveness with fewer resources is clearer than ever.

In mid-June, fellows will travel to South Africa to participate in the Clinic on Meaningful Modelling of Epidemiological Data (MMED), hosted at AIMS South Africa in Muizenberg. This two-week modelling clinic emphasises the use of real-world data in understanding infectious disease dynamics and serves as a key step before fellows begin working with immunity estimation methods at SACEMA.

Following MMED, fellows will spend four intensive weeks at SACEMA in Stellenbosch. During this time, they will adapt established modelling approaches to their own country data and produce preliminary outputs. After returning home, they continue refining their analyses, while developing policy briefs and preparing presentations for stakeholders and decision-makers.

Fellows will return to SACEMA in October for a further two-week visit to consolidate results, finalise policy briefs, and strengthen their stakeholder presentations. Dissemination meetings will take place in November and December, when fellows will present their findings to stakeholders in their home countries.

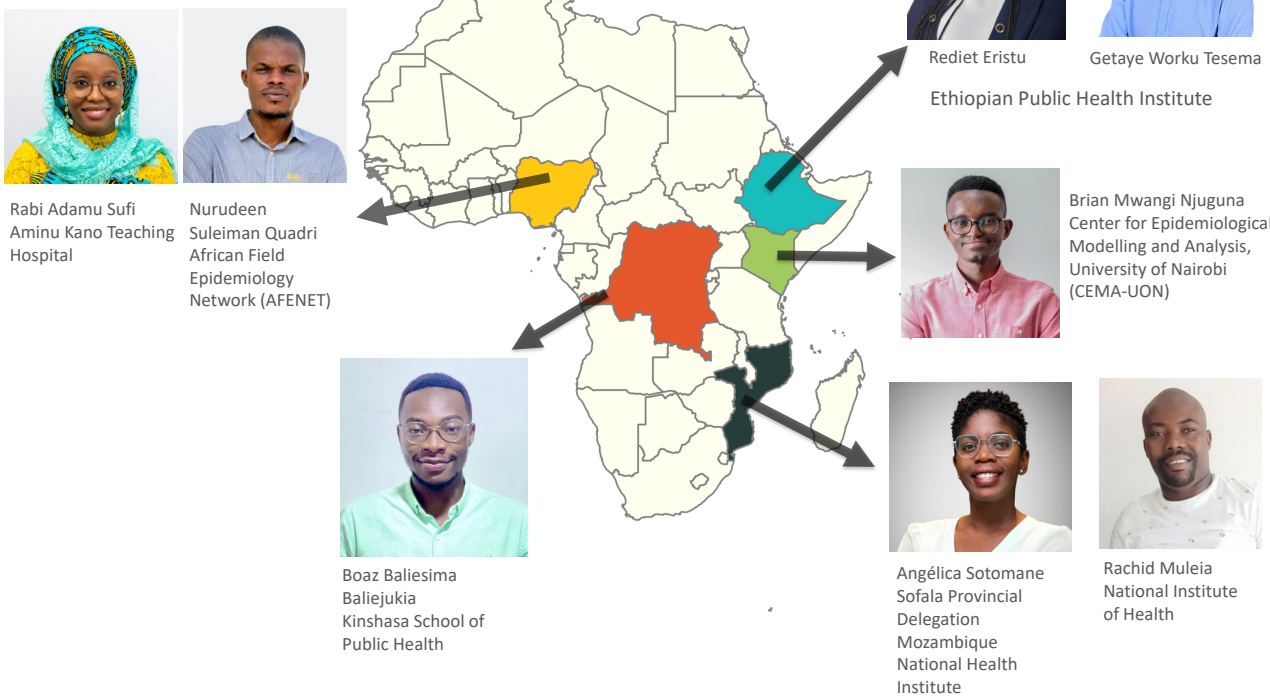
These final dissemination meetings are central to the fellowship's purpose. Fellows address key policy questions, such as how best to allocate limited resources, which population groups are most at risk, and how disease surveillance systems can be strengthened. The aim is to provide clear, usable evidence that informs planning and decision-making.

The SACEMA Policy Modelling Fellowship also recognises that becoming a confident and independent disease modeller takes longer than one year – even an intensive programme such as this is only the beginning.

SACEMA therefore connects fellows to a broader network of partners, working to make continued mentorship and support available beyond the fellowship itself.

Across Africa, disease modellers applying data-driven methods with a policy focus remain scarce. Effective modelling depends on teams who are not only technically skilled, but who also have access to data, understand local realities, and can effectively collaborate with decision-makers and other stakeholders.

Through our collaborative approach, the SACEMA Policy Modelling Fellowship is helping ensure that locally-owned data provides maximal benefit to Africa's public health stakeholders, and that world-class analysis and modelling services are available to stakeholders at critical moments.



How SWEAT Africa Sparks Hire

A connection made at SWEAT Africa 2026 led to a role at Nanosene within weeks, offering a clear example of how the event creates the conditions for real opportunities to emerge.

text: **Katrine Anker-Nilssen** **photo:** **Supplied**

For Dr Gestél Kuyler, Co-founder and Chief Executive Officer (CEO), and Dr Elaine Barnard, Co-founder and Chief Operating Officer (COO) of Nanosene, SWEAT was part of a bigger journey. Nanosene attended as part of the Open Startup BRAIN 5.0 cohort, with the event marking the final leg of the bootcamp. The team was selected to open the startup segment on stage, pitching to investors, potential collaborators, and partners.

They came to SWEAT looking for meaningful connections, visibility, and exposure to the broader startup and innovation ecosystem. What they did not plan for was meeting someone who would soon become part of their team.

Tatum Commaille, now Communication and Administration Support at Nanosene, arrived at SWEAT with curiosity rather than a fixed agenda. She had started out in a BSc degree before realising she had a deep passion for working with people and telling their stories. Tatum later moved into Humanities, graduating last December, but retained what she describes as "a love for science and earnest curiosity" about what she had yet to understand.

"It was this curiosity and a chance invite that brought me to SWEAT," says Tatum. "My goals were simply to learn more about the change-makers around me, and to experience something new."

Her curiosity quickly found a focus. "I was very impressed at Nanosene's pitching at SWEAT," she says. After mentioning this to a mutual contact from LaunchLab, she heard that Nanosene might have an opening for an intern and was offered an introduction to the founders. Tatum took the opportunity. Between events, she approached Dr Kuyler and Dr Barnard and introduced herself as their "future intern". "I explained who I was and what I did, and requested we arrange a meeting in the next week," she says. "Some discussions and a lab tour later, I joined the team. The rest is recent history!"

For Dr Kuyler, Tatum's initiative stood out immediately. "Introducing herself as our 'future intern' was bold, but it was backed by genuine curiosity and clarity in how she communicates," she says. "She brought a different perspective, not from a scientific background, but from a storytelling and people-focused lens, which is valuable for us as we grow."

The pace was quick. The team met Tatum on the Friday at SWEAT, exchanged numbers, and by Sunday she had followed up. By Monday, they were meeting for coffee. "That's where the conversation shifted," says Dr Kuyler. "It moved from a chance interaction to a more intentional discussion around her skillset, motivation, and how she could fit into the team. From there, it became about alignment, and within a few weeks she had joined the team."

For Nanosene, the decision was not only about experience on paper. It was about mindset. "At this stage, we're not just onboarding for technical skill," says Dr Kuyler. "We're building a team that takes ownership, shows up, and is willing to learn and grow with the company. Skills can be developed, but how someone shows up and takes initiative is what builds a high-performing team." That, she says, is one of the advantages of meeting potential team members in an environment like SWEAT. Founders get to see how people think, engage, and present themselves in real time – qualities that are difficult to capture through a CV or formal interview.

For Dr Barnard, the value of SWEAT lies in the mix of

people it brings together. “Events like SWEAT are valuable because they bring together people with different perspectives and experiences in one space,” she says. “Often the biggest value comes from the conversations that you did not plan for.”

The setting matters too. For Tatum, SWEAT felt different from more formal networking environments. “The free-flowing programme and natural setting created an atmosphere that removed much of the stress and intensity that can accompany networking,” she says. “The spacing of the events allowed for socialising and connecting between sessions. People seem more approachable sitting cross-legged on a lawn than parked stiffly behind a desk.”

Dr Barnard echoes this: “The relaxed setting made people more open and approachable, which allowed genuine connections to form. It was less about formal networking and more about shared conversations, interest, and opportunities.”

For Tatum, joining Nanosene has opened a door into a field she might not have chosen intuitively, but one she is now enjoying. “I was truly impressed by the co-founders: two powerful, intelligent, and poised women in STEM, pioneering a technology that could revolutionise its field,” she says. “As the start-up’s new upstart, my goal is to contribute meaningfully to the success of Nanosene, and hopefully learn as much as possible from its incredible team.” She says the opportunity allows her to apply herself to something new, while gaining exposure to the intricacies of running a business and meeting many interesting and impressive people along the way.

For the broader ecosystem, this story captures the role SWEAT can play beyond the formal programme. “At SWEAT, we were pitching in front of investors, potential collaborators, and partners, so the focus was on building visibility and strategic relationships,” says Dr Kuyler. “What’s powerful is that, alongside those outcomes, equally valuable connections can emerge organically. In the right environment, you’re not just meeting stakeholders, you’re building a pipeline of relationships across talent, partnerships, and future opportunities.”

Dr Barnard agrees: “It shows that SWEAT creates real opportunities for meaningful connections across the ecosystem. It brings together people from different backgrounds in a natural way, and those informal interactions can lead to valuable opportunities – like meeting someone who later becomes part of the Nanosene team.”

For Tatum, the story also speaks to the importance of human connection in an increasingly digital world. “It is easy to lose sight of the human on the other end of the interaction,” she says. “Tech has its uses, but when it comes down to it, people need other people. Many of the best connections and introductions happen coincidentally in informal spaces like SWEAT.”

Asked whether she would attend SWEAT again, Tatum’s answer is simple: “Absolutely. It is a meeting of incredible minds and the genesis of opportunities. And you never know what might come of it – case in point.”

For Nanosene, it reinforced the importance of being present in the ecosystem. “Sometimes the most useful opportunities are not the ones you planned for,” says Dr Barnard, “but the ones that happen naturally by simply being there and engaging with people.”

In this case, a pitch, a conversation, a coffee, and a follow-up became a hire. That is the impact of SWEAT: creating the right environment for opportunity to take root.

BELOW: From left to right; Tatum Commaille, Dr Gestél Kuyler, and Dr Elaine Barnard.

“People need other people. Many of the best connections happen coincidentally in informal spaces like SWEAT.”

– Tatum Commaille

Designing Science That Women Can Actually Use

Two new publications by Prof Jo-Ann Passmore reveal a critical gap between scientific knowledge and women's lived realities – where silence, stigma and power dynamics limit the impact of even the best research. By calling for ethical, community-driven design, the work points to a future where science is not only rigorous, but truly usable in women's everyday lives.

text: **Prof Jo-Ann Passmore** photo: **Supplied**

At first glance, these two pieces of work might seem quite different – but for me, they are really about the same core issue: how do we make science that actually works for women in real life, not just on paper?

One paper focuses on young South African women and the very real challenges they face in talking about sex and sexual health. The other looks at microbiome science more broadly and asks whether the way we conduct research is fair, relevant, and grounded in the contexts where it will eventually be used. Together, they highlight a gap that feels very urgent – between what we know scientifically, and what women are actually able to do in their daily lives.

What really stands out to me is how much silence shapes risk. Many of the young women we work with understand sexual health at some level but feel unable to talk about it – with their partners, families, or even healthcare professionals. That silence isn't just about lack of knowledge; it's about fear, judgement, power dynamics, and trying to hold onto relationships. So even the best scientific knowledge doesn't help if women don't feel able to act on it.

That's where ethical design comes in. In simple terms, it means doing science differently: working with communities, not just studying them, and making sure research reflects real lives and real needs. It's about asking: who is this for, and will it actually work for them?

If we want to truly improve women's health, we need to go beyond developing new tools. We need healthcare systems that are respectful, spaces where women feel safe to speak, and research that listens as much as it measures.

At the Women's Health Programme at CERI, this is exactly where my work is heading – bringing together biology, behaviour, and women's lived experience to co-create solutions that are not only scientifically strong, but genuinely usable and meaningful.

ABSTRACT 1: 'The not talking is actually what kills you' – young South African women's communication barriers about sexual health

Authors: Felicity Hartleya, Jill Trapplerc, Katherine Gilld, Linda-Gail Bekkerd, Virginia MacKennye, Lucia Knight, and Jo-Ann Passmore

Conversations about sex and sexual health are often stigmatised and shaped by socio-cultural influences. For young women, lack of adequate communication can influence access to information, knowledge and behaviour and therefore increase vulnerability to negative outcomes such as sexually transmitted infections (STIs) and unintended pregnancy. This qualitative study investigated the barriers young women face when seeking dialogue about sex, their sexual health and relationships. Seven isiXhosa-speaking young women (aged 21–25) participated in a six-session art-based engagement, creating large-format paintings reflecting their sexual health experiences. Data collection included in-depth interviews and a focus group discussion, which were transcribed, translated and thematically analysed. Findings revealed that communication about sex and sexual health was hindered by the attitudes of family, partners communities and health care providers. The need to please and retain partners also restricted young women's ability to express their sexual health needs and desires. Young women felt that with age and maturity they gained confidence, agency and capacity to navigate difficult conversations. Empowering tools and strategies to improve communication could enhance young women's agency, enabling them to overcome barriers for communication and actively seek sexual health information and services.

Read the full publication here:
https://ceri.org.za/publication/?token=589

ABSTRACT 2: Ethical design as a prerequisite for translational microbiome science

Authors: Jo-Ann Passmore, Abigail Nieves Delgado, and Anna-Ursula Happel

Human microbiome research is expanding globally, yet remains dominated by samples, institutions, and leadership from the Global North. This imbalance undermines scientific validity, as microbiomes are shaped by socioecological context and temporal dynamics, and risks producing diagnostics and therapeutics that are not applicable across diverse populations. In this comment, we engage with van Daele et al.'s framework of colaboration and argue for ethical, interdisciplinary, and locally-led research models that center community participation, context-rich metadata, and equitable authorship. We outline structural requirements – governance tools, funding mechanisms, and accountability systems – needed to ensure these frameworks are implemented and advance both scientific integrity and global health equity.

Read full publication here:
https://ceri.org.za/publication/?token=588

Oropouche's Expansion Explained

A virus once limited to the Amazon has spread across Brazil, putting millions at risk. New research reveals how environmental shifts and transmission dynamics are driving its rapid expansion.

text:
CERI Media

For decades, Oropouche virus has caused outbreaks in the Amazon region. Spread by a tiny biting midge rather than a mosquito, it was largely restricted to communities within the Amazon Basin. In 2024, it expanded beyond that boundary for the first time at this scale.

More than 8,000 people were confirmed infected in Brazil. The virus reached states including Bahia, Rio de Janeiro, and Santa Catarina, where it had not been reported or had only been detected rarely before. Across the Americas, 10,275 confirmed cases were recorded across nine countries. Brazil also reported severe complications including deaths, maternal and foetal impacts, and cases of microcephaly – a condition where babies are born with abnormally small heads. There is no licensed vaccine and no specific antiviral treatment.

A recent publication in the journal Nature Ecology and Evolution explains, at national scale, how and why this expansion happened.

What revealed the drivers of the outbreak

Researchers from South Africa, Brazil, Belgium, the USA, the UK, Portugal, and Australia combined two approaches that had never before been used together at this scale for Oropouche virus.

The first used viral genomes like a molecular travel log, reconstructing where the virus moved across Brazil and how fast. The second built an environmental risk map, identifying which areas of the country have conditions most favourable for the virus to circulate and infect people.

"It linked where transmission actually occurred with where it was ecologically possible, revealing both realised and potential risk landscapes. Together, they exposed not just current transmission pathways, but also environmentally suitable areas that remain uninfected yet vulnerable to future emergence," said Prof Houriiyah Tegally, Head of the Data Science Unit at the Centre for Epidemic Response and Innovation (CERI), at Stellenbosch University. She added, "One key discovery only possible by integrating both approaches, was finding that Oropouche ticked along in moderately suitable areas until it hit an ecological and demographic sweet spot, triggering explosive spread outside the Amazon."

How the virus spread

The expansion unfolded in two stages. In mid-2023, the virus amplified in areas around Manaus, in the Amazon state, where a combination of warm temperatures, forest cover, and human population density created favourable conditions for transmission. Ecological suitability in these areas peaked during this period.

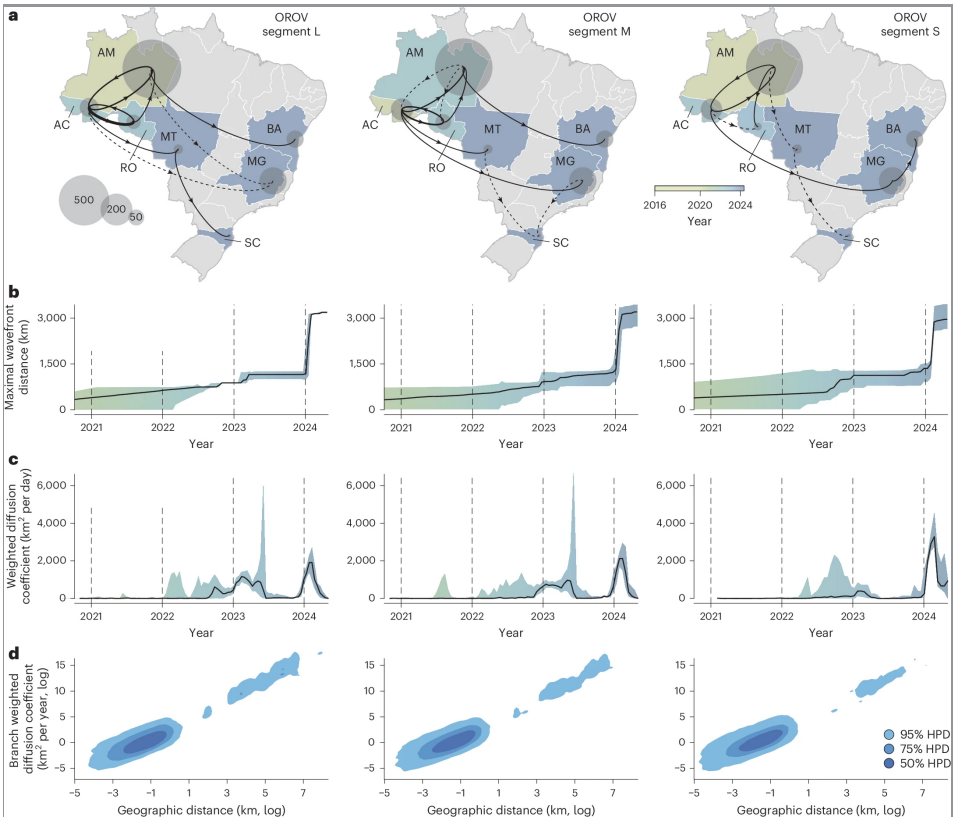
From 2024, the virus spread far beyond the Amazon, reaching areas more than 3,000 kilometres from its epidemic origin. The speed and pattern of this spread, as seen in the genetic data, is consistent with human-mediated dispersal, although the study does not confirm the specific mechanism.

The environmental conditions most strongly associated with the spread were banana and cocoa plantations, where the midge that carries the virus breeds in decaying plant debris; temperatures of around 25 to 27 degrees Celsius; and higher human population density and urbanisation.

"Our analyses of viral genetic data reveal an expansion process with both short- and long-distance dispersal events, with some diffusion velocities in line with air traffic-mediated jumps," said Professor Simon Dellicour, Spatial Epidemiology Lab, Université Libre de Bruxelles.

Dispersal history of OROV lineages inferred through continuous phylogeographic reconstruction (figure, right).

Movements between Brazilian states are shown as solid arrows (posterior probability ≥0.95) and dashed arrows (<0.95). Grey dots indicate locations, sized by the number of local dispersal events. States are coloured by estimated date of first invasion (median from posterior trees) and labelled by abbreviation.
tMRCA estimates show overlapping 95% HPD intervals: March 2017–September 2020 (L), August 2016–December 2019 (M), and July 2015–April 2018 (S).
(b) Spatial wavefront distance over time and (c) weighted diffusion coefficient (dispersal capacity), both shown as median with 95% HPD. (d) Kernel density of diffusion coefficient versus geographic distance (log-transformed). Base map from GADM v4.1.



Where the risk is highest

The environmental risk map identifies high ecological suitability for Oropouche virus transmission along much of Brazil's coast, where approximately 111 million people – around 54.8% of the country's population – live.

The map (Figure) reveals surveillance blind spots. Northeastern and central-west Brazil show high predicted suitability but have sparse active monitoring for the virus. Transmission in these areas could go undetected.

"High ecological suitability without adequate surveillance means the virus can circulate undetected, delaying response and allowing transmission to establish before interventions are implemented. In practice, this creates hidden hotspots where outbreaks may only become visible once they are already widespread and harder to control", said Dr Marta Giovanetti, from the Oswaldo Cruz Foundation in Rio de Janeiro, and Università Campus Bio-Medico di Roma.

What's next?

Researchers are already tracking where the virus may spread next. Dr Jenicca Poongavanan, a co-author of the study, points to new evidence of northward expansion.

"Our upcoming environmental suitability work predicts northward spread, with transmission risk areas identified in southeastern Mexico, and we have already seen this play out with the virus reaching Haiti and Cuba. We also need to watch closely for experimental vector competence studies investigating whether mosquitoes can transmit Oropouche virus. If they can, this dramatically expands the potential range into regions like the southern United States, where these species are abundant," said Dr Jenicca Poongavanan, from the Centre for Epidemic Response and Innovation (CERI) at Stellenbosch University.

The study calls for vector control around banana and cocoa plantations near urban areas, where conditions for midge breeding are most favourable. It recommends expanding active surveillance into high-suitability regions that currently lack monitoring. It also notes that Oropouche fever resembles dengue clinically and is likely being missed in diagnostic settings, meaning confirmed case counts may underestimate the true burden.

The analytical framework developed in this study – combining genomic surveillance with ecological risk mapping – can also be applied to other arboviruses including dengue, Zika, and yellow fever.

Publication:
DOI: 10.1038/s41559-026-03042-0.
URL: https://www.nature.com/articles/s41559-026-

Beyond the Diagnostic

Marième Samb Traoré on innovation, access, and real-world impact.

text & photos: **Center for Africa's Resilience to Epidemics (CARE) at the Institut Pasteur de Dakar**

For Marième Samb Traoré, a Technology Transfer Specialist at Institut Pasteur de Dakar and African STARS Young Professional Fellow from Senegal, the fellowship did more than deepen scientific knowledge. It reinforced a core principle: health innovation in Africa must be designed for implementation, not just efficacy, within existing systems and at population scale.

Before joining African STARS, Marième had already built hands-on expertise in developing and validating rapid diagnostic tests and supporting technology transfer toward production. She did not enter the fellowship as a beginner. She entered it as a scientist ready to broaden her impact. "I was already working in the field of in vitro diagnostics, focusing on the development and validation of rapid diagnostic tests. My role involved managing different stages of product development, including design, analytical performance evaluation, and technology transfer toward production."

What drew her to African STARS was the chance to strengthen skills that sit beyond the laboratory, but are essential to public health change. "What motivated was the opportunity to develop my skills in innovation, project structuring, and strategic thinking," she says. "I was particularly drawn to the fellowship's focus on empowering African scientists to address local health challenges with locally adapted solutions. This strongly resonated with my ambition to contribute not only to the development of diagnostic tools, but also to shaping how they are effectively deployed in real-world settings."

The fellowship combined technical training with broader exposure to innovation, entrepreneurship, grant writing, and storytelling. For Marième, that multidisciplinary design mattered because it pushed fellows to connect science to implementation. "The first four months were structured as an intensive training phase covering key areas such as biosafety and biosecurity, advanced genomics, grant writing and storytelling, as well as vaccine and diagnostic R&D and manufacturing, alongside innovation and entrepreneurship," she says. "One of the key highlights was the exposure to a network of African professionals working across different disciplines. The diversity of perspectives was extremely valuable and helped me better appreciate the complexity of health challenges, as well as the importance of multidisciplinary approaches in addressing them."

One of the clearest shifts in Marième's perspective is her growing attention to what happens after an innovation is developed. She describes entrepreneurship, project structuring, and scientific communication not as secondary skills, but as central to turning science into impact. "These discussions helped me better understand the pathway from scientific development to real-world impact. They also pushed me out of my comfort zone by encouraging me to think beyond technical execution and engage with broader questions such as impact, scalability, and sustainability," she says – adding that she strongly believes that these skills are essential for scientists not only to develop innovations, but also to clearly communicate their value and articulate the impact they can have in real-world settings.

Marième's strongest reflection is also the most important one. She does not describe the fellowship as simply helping her improve. She describes it as helping her see more clearly what meaningful innovation requires in the African context. "The most important lesson I took away from this fellowship is that creating an innovation itself is not enough. It is essential to develop solutions that are not only scientifically sound, but also practical, affordable, and scalable," she notes. "This is especially true in the African context, where factors such as access, infrastructure disparities, and cultural aspects must be carefully considered."

One of the main outputs of Marième's fellowship was the development of a project on a multiplex rapid diagnostic test designed to simplify the workflow for healthcare workers. What matters most is how she now thinks about the project: not only in technical terms, but through the lens of accessibility and scale. "This process allowed me to go beyond the technical aspects and think more concretely about funding, implementation, accessibility, and how such a solution could realistically be deployed at scale in low-resource settings."

Overall, she says, "this experience has strengthened my ability to translate technical ideas into practical, scalable solutions that can contribute meaningfully to expanding access to healthcare across Africa."

Perhaps the most revealing part of Marième's testimony is what surprised her most: the real barriers to healthcare access are often not a lack of ideas, but the wider ecosystem around them. "The difficulty in accessing healthcare is often not due to a lack of ideas or innovation. Rather, it stems from the need for scientists to better understand and engage with other critical dimensions such as leadership, policy and regulatory frameworks, health system integration, supply chain, user needs, as well as aspects like marketing, commercialisation, and fundraising."

That statement captures the broader significance of her story. Building resilience to epidemics requires scientists who can do more than innovate. It requires scientists who can navigate the systems that shape whether innovation becomes access.

When Marième speaks to future applicants, her advice is simple but telling: "If you are looking to expand beyond your current role and gain a broader perspective on how your work can create impact, this fellowship is a very valuable opportunity. It is not just about gaining knowledge, but about challenging how you think, how you approach problems, and how you position yourself as a contributor to change."

Asked to describe African STARS in one word, she chose: "Transformative." For CARE, that transformation is not only personal. It points to the kind of African scientific leadership needed to strengthen public health systems: technically strong, strategically grounded, and committed to solutions that are practical, scalable, and built for context.

The African STARS Fellowship Programme is implemented by CARE at Institut Pasteur de Dakar and CERI at Stellenbosch University, with support from the Mastercard Foundation.

Rethinking How Health Research Works

Engaged research is reshaping how global health challenges are understood and addressed by bringing communities into every stage of the process. At CERI, this approach is helping to build more grounded, context-driven solutions for climate and infectious disease risks in vulnerable settings.

text: **Dr Gill Black** photo: **Ameera Crew**

As a former infectious diseases immunologist and geneticist, I was fully immersed in my work. My scientific studies on malaria, tuberculosis and HIV in Kenya, Brazil, Malawi and South Africa, carried out over 18 years, kept showing me a crucial gap in global health research: the need for stronger community engagement and involvement (CEI). I transitioned into the CEI field in 2010, when I co-founded the Sustainable Livelihoods Foundation (SLF), a not-for-profit research and engagement organisation based in Cape Town. In founding SLF, my intention was to facilitate community engagement and community-based participatory research across a broad range of pressing public health issues affecting South Africa and the region.

Since then, I've been contemplating, practising, writing about, and learning from what is now widely known as 'engaged research', and my perspectives on this field have continued to grow.

I approach my engaged research practice through a transdisciplinary lens, aiming to support equitable academic–community partnerships and multi-stakeholder participation. This approach recognises the value of different forms of evidence and expertise in global health research. It involves facilitating knowledge exchange among interdisciplinary researchers and non-academic actors, including affected communities, individuals with lived experience, representatives of civil society, and policymakers. From my point of view, the exchange of knowledge across academic and non-academic groups helps to democratise research prioritisation and decision-making.

Taking an engaged research approach to health research requires methodological innovation and exploration. In my practice, I draw on different participatory methods and tools that often involve facilitating visual, creative and arts-based activities. I have found that participatory visual methods, such as digital storytelling, help to ensure that relevant voices are expressed, articulated and integrated at the right moments. Their outputs have the potential to meaningfully influence the direction of research and possibilities for societal impact. When using visual methods in research, it is vital to be aware of the potential for stigmatisation and to safeguard anonymity and confidentiality.

Engaged research practice also requires close attention to the local context in which you are working. Contextual differences in language, cultural beliefs, religious practice, stakeholder interaction, and the way policymakers are engaged have significant implications for the who, when, what, where and how of transdisciplinary approaches and multi-stakeholder participation in health research.

Broadly speaking, principles of engaged research mean engaging and involving an array of non-academic actors throughout the entire research life cycle, at different points in time. This spans collaboration in agenda setting, research design, generating and analysing data, interpreting and disseminating findings, in addition to formulating, piloting and rolling out evidence-based interventions and adaptation strategies. This bold, justice-focused worldwide vision presents vital opportunities for us to better understand what it takes to practise engaged research in vulnerable settings in an ethical, effective and sustainable way. It also presents significant scope to learn about policy engagement, especially as complex global health challenges cannot be addressed through a one-size-fits-all approach to policy and decision-making, and contextualisation is central to success or failure.

Through our co-leadership of the Social Science Unit (SSU) at CERI, Dr Astrid Treffry-Goatley and I aim to strengthen the transdisciplinary and participatory nature of CERI's work. The impacts of climate change and the increasing frequency of extreme weather events are diverse and far-reaching, including the escalation of existing and emerging infectious diseases.

There is an urgent need to implement climate adaptation strategies that work in the most at-risk settings. Integrating the experiences, insights and suggestions of people who have been affected, and who are most at risk of the direct and indirect impacts of climate change, will help ensure that intervention strategies are more grounded, accessible and contextually relevant, and can be evaluated by those who need them to work.

We also aspire to support other scientists at Stellenbosch University and beyond through teaching and training. The Public Squares and African STARS initiatives present valuable opportunities to reach these goals.

It has been hugely rewarding to see engaged research in global health grow so extensively over the past two decades, as evidence of its necessity and value has become increasingly apparent.

Every day, new ground is being broken and boundaries are being pushed. It truly is a motivating and inspiring time to be working in this field. Of course, there are myriad challenges, and as always, there is so much to learn. I am thrilled to continue contributing and learning through my fellowship with CERI, and honoured to do so in partnership with Astrid and the SSU team.

WELCOME, DR GILL BLACK

We are delighted to welcome Dr Gill Black to the Centre for Epidemic Response and Innovation (CERI). An engaged research specialist with a background in immunology and infectious disease research spanning over two decades, her early career included work on malaria, tuberculosis and HIV across Kenya, Brazil, Malawi and South Africa.

In 2010, she co-founded the Sustainable Livelihoods Foundation (SLF), a Cape Town-based non-profit focused on community engagement and community-based participatory research across pressing public health challenges. Her work centres on advancing equitable community–academic partnerships, using participatory and creative methods to ensure that the voices and lived experiences of affected communities are meaningfully integrated into research and decision-making.

At CERI, she co-leads the Social Science Unit (SSU) with Dr Astrid Treffry-Goatley, where she focuses on strengthening transdisciplinary research and multi-stakeholder engagement, particularly in the context of climate change, environmental risk, and infectious disease.

Science Is the Start, Business Is the Way

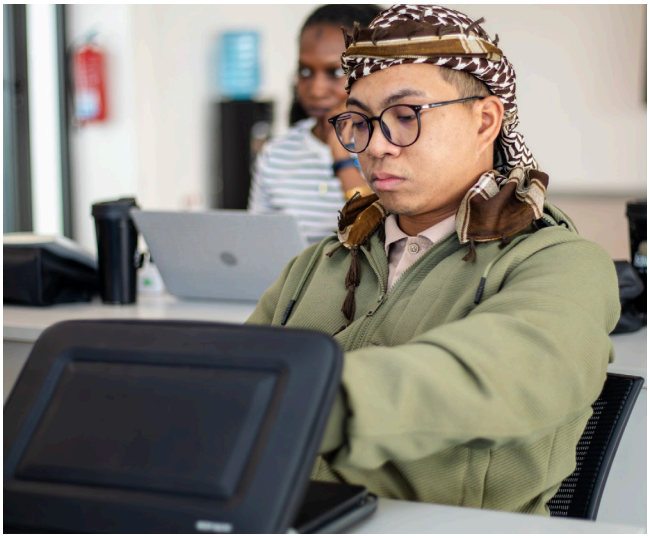
A fellowship designed to close Africa's health innovation gap is already reshaping how young scientists think – and act – beyond the lab.

text & photo: Center for Africa's Resilience to Epidemics (CARE) at the Institut Pasteur de Dakar

In 2023, more than 150 infectious disease outbreaks were recorded across Africa. The continent still imports most of the vaccines, diagnostics and therapeutics it consumes, and the scientific talent able to change that picture remains scarce on the ground. The African STARS Fellowship Programme, launched by the Mastercard Foundation in partnership with the Centre for Epidemic Response and Innovation (CERI) at Stellenbosch University and the Center for Africa's Resilience to Epidemics (CARE) at Institut Pasteur de Dakar, was designed to change that.

Levi Hosea joined the fellowship's Young Professional Programme (YPP) from Madagascar. He arrived in Dakar with a strong profile: management of a public health programme inside a global project, plus consulting work across research, business development and data science. What drew him to African STARS was the piece of the problem his previous roles had not yet equipped him to solve.

"I had an idea of making access to care fun, easy and affordable. I was wondering how I could get appropriate guidance on how to make my idea real. One of the ASTARS offerings responds to this desire of growth and achievement."



Levi first saw the call for applications on social media, then received direct messages from contacts in his network urging him to apply. He describes the fellowship as arriving at the right time, as he was actively looking for a structured way to deepen his understanding of the entrepreneurship side of public health, genomics and translational science.

The fellowship opens with four months of intensive training on health technologies, science and entrepreneurship, before fellows are placed inside IPD departments aligned with their career plans and capstone projects. Levi is candid that even a strong starting profile did not prepare him for the intensity.

"The fellowship is not like what I expected. Even from a strong science and business background, I didn't expect the training to be highly challenging. The rigour and quality of trainings are really impressive and hard enough to prepare better, future global health and business leaders."

That discomfort, he argues, is the point. Placement pushes fellows directly into what he calls the "first line of exploration, scientific rigor and responsibilities." His days at IPD mix climate–health modelling for early warning systems, business intelligence and solutions development with personalised mentorship on his capstone project. New ideas, he notes, are not merely tolerated; they are requested.

"Exploration has a cost. But exploration is always welcomed and requested. This philosophy touched me profoundly as it puts growth and innovation at first priorities."

Ask Levi what he will carry out of the fellowship and he does not describe a technique or a credential. He describes a reframing of the problem itself.

"Global health challenges can be resolved if scientific knowledge and innovations are translated into viable business. Science is the start, but business is the way. Scientific innovations which lack business implementation will fail."

For Levi, IPD's work on vaccines and diagnostics makes this concrete. A diagnostic test that stays in a laboratory cannot protect African populations. A vaccine that cannot recover its development costs cannot be sustained, let alone produced at the scale an outbreak demands. "The vaccines and diagnostics are put into market and should at least meet return on investment to be able to support more research and continue serving African populations."

This is the systems change that African STARS is built around: ensuring that the next generation of African scientists does not stop at discovery, but is equipped to build, finance and lead the organisations that put those discoveries within reach of patients.

Levi's capstone ambitions are practical. He is using the fellowship period to build relationships with people and businesses active in global health and technology, and to learn what it takes to start and invest in a healthtech company across Senegal and the wider West African market – a context that differs meaningfully from Madagascar's. His stated goal is clear: a health tech startup assembled from both scientists and business operators.

He is equally candid about what the fellowship cannot do on its own. "It means for me that I have a lot of work ahead, including the set up of my health tech startup by gathering scientists and business. Global health challenges are, in big part, business challenges."

When asked what he would say to someone considering the programme, Levi does not rely on the usual language of opportunity. "Applying for the ASTARS fellowship is a competition. Being an ASTARS fellow is still a competition. But here the competition is not among applicants and fellows. The competition is with you, and with global health challenges."

Asked to describe the fellowship in a single phrase, his answer was short: Preparation for bigger responsibility. At CARE, we believe that African health sovereignty is not only a scientific question. It is also an entrepreneurial, institutional and financial one. Fellows like Levi are the reason we work on all four at the same time.

Advancing Genomics Capacity

text & photo: **Paul Harris**

Collaboration and continuous learning are at the heart of advancing genomics in Africa – and the return of Dr Armando Djiyou to KRISP reflects just that.

As part of the African Research Universities Alliance (ARUA) Early Career Research Fellowship, Dr Djiyou has rejoined the KwaZulu-Natal Research Innovation and Sequencing Platform (KRISP) for a six-month placement, where he will further develop his expertise in infectious disease genomics.

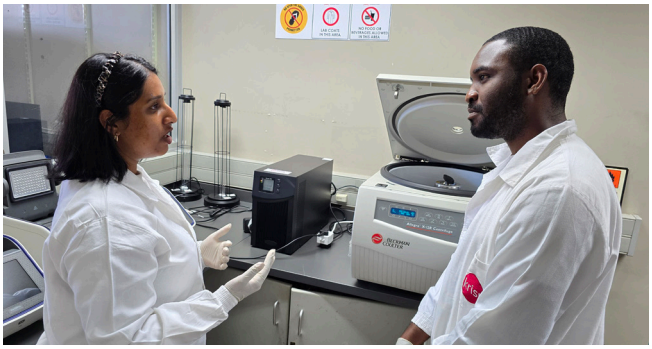
His research focuses on a critical and often overlooked challenge in HIV care: detecting drug resistance in patients with low-level viraemia. By optimising in-house methods to better characterise HIV drug resistance mutations, his work aims to support earlier intervention and improve patient outcomes – particularly in settings where treatment options may be limited.

For Dr Djiyou, the fellowship is both a professional and personal milestone.

"It's a privilege to be back at KRISP, building on previous collaborations and learning from a team with such deep expertise. This opportunity allows me to strengthen my genomics skills while contributing to research that has real implications for HIV care across Africa."

Working closely with mentors including Dr Jennifer Giandhari and Dr Richard Lessells, and supported by a broader network of collaborators, his placement highlights the importance of investing in early-career scientists.

Programmes like this not only build individual capacity – they strengthen the collective ability to respond to some of the continent's most pressing health challenges.



CERI Contributes to new Africa CDC Genomics Advisory Group

Prof Tulio de Oliveira has been appointed to the Africa CDC's new African Strategic Advisory Group on Genomics, a continental body guiding the governance and application of genomics in public health. The group will help shape how genomics is used across Africa to strengthen disease surveillance, outbreak response, and equitable access to innovation.

text and photos:
Africa CDC & CERI Media

The Centre for Epidemic Response and Innovation (CERI) is part of a new continental effort to strengthen how genomics is governed and applied across Africa, following the launch of the African Strategic Advisory Group on Genomics (ASAG) by Africa CDC.

CERI Director Tulio de Oliveira has been appointed as one of eight members of the inaugural advisory group. The multidisciplinary body will provide independent, evidence-based guidance to support the strategic use of genomics in public health across the continent. ASAG has been established to guide the governance and implementation of genomics, with a focus on equitable access, ethical use, and African leadership. Its work supports priorities including precision public health, integrated disease surveillance, outbreak preparedness and response, and the development and local manufacturing of medical countermeasures.

The group builds on progress made through the Africa Pathogen Genomics Initiative, which has expanded sequencing, laboratory, bioinformatics, and data capacity across Africa. These advances have strengthened the use of genomics in tracking and responding to threats such as mpox, cholera, antimicrobial resistance, malaria, and other epidemic-prone diseases. ASAG will help consolidate these gains while also guiding the broader application of pathogen and human genomics to address emerging priorities, including non-communicable diseases.

Aligned with Africa CDC's agenda on health security and sovereignty, ASAG will provide recommendations on strategic priorities, standards, capacity building, technology transfer, data governance, ethics, intellectual property, and partnerships. Members serve in their personal capacity, offering independent advice while Africa CDC retains responsibility for implementation.

The group is chaired by Prof Christian Happi, with Prof Ghada El-Kamah as Co-Chair, and brings together expertise across genomics, clinical science, public health, bioinformatics, and data governance.
For CERI, participation in ASAG reflects its continued role in shaping genomics-driven public health across Africa, contributing to more coordinated, equitable, and impactful use of genomic science.

Media Coverage

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

Hantavirus NICD

As hantavirus cases were confirmed aboard an international cruise liner, with the NICD and Gauteng Health launching contact tracing, CERI Director Prof Tulio de Oliveira joined SABC News to provide scientific context on the outbreak. In this interview, Prof de Oliveira speaks to what hantavirus is, how transmission occurs, and what the public health response looks like when cases emerge in a complex, cross-border setting.

Watch the full video here:
https://www.youtube.com/watch?v=q2IrkbcfZh8

Beyond the Lab

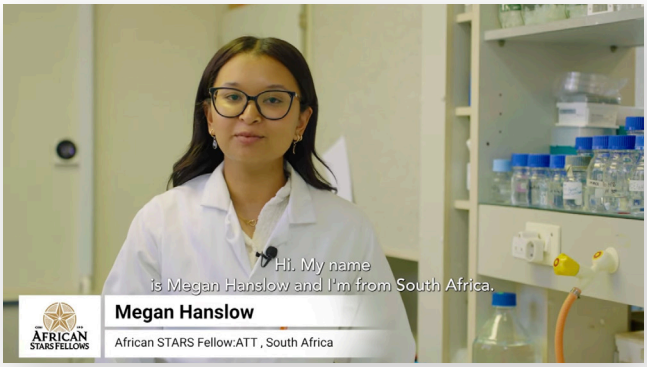
What does your science actually do for the world? In this CERI Happy Hour Seminar, Prof Brian G. Fox (Chair of Biochemistry, University of Wisconsin–Madison) explores what it takes to translate scientific research into real-world solutions — from diagnostics and bioengineered products to industry partnerships and pandemic preparedness tools. Prof Fox draws on decades of experience in enzymology, technology transfer, and global health collaboration.

Watch the full video here:
https://www.youtube.com/watch?v=1GELdSCIORo

African STARS Fellow Megan Hanslow

For many early-career African scientists, the barrier is not capability, it is access. Access to networks, industry pathways, and opportunities that allow scientific knowledge to translate into real-world impact. The African STARS Fellowship is designed to bridge that gap. Megan Hanslow reflects on what changes when that access is granted: confidence, professional voice, and a direct pathway from academic training into applied, meaningful work.

Watch the full video here:
https://www.youtube.com/watch?v=-0C3uoJFUDA



The Future of Genomics is Being Shaped in Africa

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