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Professor Quarraisha Abdool Karim is presented with the AU Kwame Nkrumah Scientific Award in Addis Ababa

On page 2, we cover the deliberations of the UKZN World AIDS Day debate by leading HIV/AIDS researchers

On page 3, the community is acknowledged for its VMMC partnership with CAPRISA

Professor Quarraisha Abdool Karim receives African Union Scientific Award

In November, Professor Quarraisha Abdool Karim received one of three awards presented by the African Union (AU) Kwame Nkrumah Scientific Awards Programme in its Women Scientist Regional category.

The winners were announced at the African Union Commission Award Ceremony held in early December during Science, Technology and Innovation Week at the AU Headquarters in Addis Ababa, Ethiopia. The ceremony was opened by His Excellency Demitu Hambisa, the Ethiopian Minister of Science and Technology, who discussed the huge potential of science and technology to bring growth and socio-economic growth to developing countries. Science, Technology and Innovation Week was among one of many events organised for the 50th anniversary celebration of the AU.

Professor Abdool Karim was presented with a plaque in recognition of her “great scientific achievement and contribution through science for the socio-economic development of Africa.” Her services to society include her work in developing the first effective microbicide to prevent HIV transmission in women, participation in policy making groups, academic positions at leading institutions and involvement in training and development of the next generation of researchers.

The other Award recipients were Dr Yvonne Bonzi-Coulibaly from Burkina Faso, an organic chemist with a special interest in water contamination, and Professor Isabelle Glitho-Akueson from Togo, an entomologist studying the effect of insects on stored grain supplies.

From left: African Union Kwame Nkrumah Women in Science Award recipients — Yvonne Bonzi-Coulibaly, Isabelle Glitho-Akueson and Quarraisha Abdool Karim

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Virus escape causes more potent antibodies against HIV

This study details the sequential development of three distinct broadly neutralizing antibody responses within a single HIV-1 infected individual over 4 and a half years of infection.

The study showed how escape from the first wave of antibodies targeting V2 exposed a second site that was the stimulus for a new wave of glycan dependent broadly neutralizing antibodies against the CD4 binding site.

These data highlight how antibody evolution in response to viral escape mutations served to broaden the reactivity of antibodies to these two epitopes.

Another document ed finding was a third wave of neutralization that targets an undefined epitope that did not appear to overlap with the four sites of vulnerability on the HIV-1 envelope identified so far.

These data support the design of templates for sequential immunization strategies aimed at increasing neutralization breadth through the recognition of multiple epitopes and their immunotypes.

Further reading


Necessity drives innovation: AIDS researchers ignite hope

Ahead of World AIDS Day 2013, leading HIV/AIDS researchers in Durban urged society to focus on insights, innovation and integrity in the journey into an HIV-free future – and to put people at the centre of health services.

A discussion hosted by the UKZN Deputy Vice-Chancellor Professor Rob Slotow at the University of KwaZulu-Natal’s College of Health Sciences on the theme ‘Putting the “I” back into HIV – new approaches in developing person-centred interventions to fight the epidemic’ included a distinguished panel of KwaZulu-Natal researchers.

Focusing on sexual transmission of HIV as the key driver of infection, Professor Salim Abdool Karim, head of CAPRISA, said that particularly over the last three years, there had been an explosion of research evidence compiled on HIV prevention using antiretroviral drugs as prophylaxis. This evidence has changed the global approach to HIV prevention methods, and offered real hope for reducing levels of incidence.

Professor Alan Whiteside of Health Economics and AIDS Research Division (HEARD) emphasised the financial burden of not curbing new HIV infections and the need for efficient spending in light of diminishing overseas donor aid. “The cost of drug supplies and staff will compromise the health budget in some other area. ARVs have preventative effects, but we cannot treat our way out of AIDS.

Audi ence members called for the establishment of a local drug industry that could produce medicines for a broad range of infectious and non-communicable illnesses, questioned the standards of primary health care service delivery, and raised the issue of more radical programmes for behaviour change prevention messaging.

According to Professor Abdool Karim, necessity drives innovation, and because of the sheer need to address HIV-related problems, we’re now doing things differently for a number of diseases such as TB, asthma, hypertension and diabetes – we have home-based and point-of-care testing, as well as task-shifting to optimise our health worker capacity.” On behaviour change, he noted that more studies are needed on behaviour change solutions for HIV prevention that focus on structural drivers – one example being a cash incentive for staying HIV-negative.

Speaking on the prospects of a viable HIV vaccine, Professor Thunbi Ndong’u of the KwaZulu-Natal Research Institute for TB and HIV (K-RITH) said that although research had not yet yielded a vaccine solution eligible for licencing, there was evidence that a vaccine is possible. “An HIV vaccine is an enormous challenge,” he explained, “because the virus is a formidable enemy”. Asked whether it was feasible to pursue an HIV vaccine in the context of funding shortages, Professor Ndong’u argued: “In 1935, no-one believed that a polio vaccine would work, but scientists persisted and eventually triumphed. We are doomed as a society if we don’t keep trying to know more.”

HIV genetic analysis and molecular evolution

Continued on page 3
“We all have a role in bringing about change in South Africa”

Angeline Zondo is a first-year medical student and CAPRISA medical research placement with a specific interest in vaccines.

With much of the global emphasis being placed on prevention strategies, Angeline believes that a vaccine is the only way to curb HIV infections amongst adolescents whose main social priorities are overcoming poverty, dealing with peer pressure, earning money and having fun.

She is currently conducting research on the CCR5 receptor and its mutant allele, looking into how immunity can be induced in people who do not have natural immunity against HIV.

So far, her term with CAPRISA has provided an enabling environment, captured in her words: “CAPRISA has given me a platform to find the answers I’ve always looked for and also to have a better understanding of the things I am interested in.

Angeline’s ambitious long term plans are in line with her desire to bring about change and improving the state of health in South Africa. She plans to build her own specialisation hospital which is affordable and places patients’ needs first.

“If you are a curious, hardworking person and want to make your mark in the world, then this is the place to be. Your life and the way you think will be transformed.”

Community vital to VMMC programme

In 2010, CAPRISA in partnership with a local NGO, Zimnandi Zonke, embarked on a voluntary adolescent male circumcision programme (VMMC) following funding in 2010 from the President’s Emergency Plan for AIDS Relief (PEPFAR). Together, CAPRISA and Zimnandi Zonke conducted stakeholder consultations and awareness sessions in 42 schools in the Vulindlela school circuit to bring VMMC to the community.

Three years later, in October 2013, CAPRISA and Zimnandi Zonke co-hosted a gala event for almost 100 representatives from the Department of Education District management, the Department of Health, school principals, teachers and Dr May Mashego-Mkhize.

Dr Janet Frohlich, Head of the CAPRISA Community Programme, presented an overview of the organisation and Ms Nelisiwe Ngcobo, Project Director for the VMMC, provided an overview of the programme.

A total of 6280 circumcision were performed from June 2010 to September 2013. The majority of males who received the procedure were between 15 and 19 years of age. During the screening process, only 0.2 per cent of males tested positive for HIV which confirmed a very low prevalence of HIV in this target population.

The highlight of the evening was the awards ceremony whereby every school received a medal for their participation in the programme.

Four schools received trophies for their outstanding support of the programme—Siyanda, Msimude, Mconjwana and Asande Schools —and the floating trophy went to Phayiphini School for achieving the highest uptake of VMMC.

Mr Thembu Mjilo of the Thembu Mjilo Foundation presented Dr Carl Montague, the CAPRISA Vulindlela site director, with a trophy on behalf of the community for the impact CAPRISA has had in the Vulindlela community.

- Dr Janet Frohlich
### Scientific Reviews

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CAPRISA is an official research institute of the University of KwaZulu-Natal and Columbia University.

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**Scientific papers published in 2013**


