



### In this Issue

Our feature story in the first issue of the newsletter for 2019 focuses on two papers that describe monoclonal antibodies (mAbs) isolated from another participant in the CAPRISA 002 cohort published in *Nature Communications* & *Cell Reports*

On page 2 we report on an article published in *Nature* titled: Meeting Milestones that features Quarraisha Abdool Karim. We also report on the visit by MIT and Ragon students & congratulate young scientist Simone Richardson on her PhD.

We congratulate Quarraisha Abdool Karim and Lynn Morris on the recognition by the African Academy of Sciences, Nesri Padayatchi & Kogie Naidoo on honorary professorships and two NIH-funded training workshops on page 3.

Page 4 features highlights from CAPRISA's annual Research and Awards event attended by key stakeholders.



# CAPRISA

CENTRE FOR THE AIDS PROGRAMME OF RESEARCH IN SOUTH AFRICA

## Newsletter

January 2019 Volume 18 Issue 1

## Antibodies from another CAPRISA participant provide insights for vaccine science

**T**wo papers published in December 2018 by the team at the National Institute of Communicable Diseases (NICD) describe monoclonal antibodies (mAbs) isolated from another participant in the CAPRISA 002 cohort. This time, its CAP228 who developed a non-neutralizing antibody response to the V2 region, similar to what was seen in the moderately effective RV144 vaccine trial.

The first paper by Kurt Wibmer, in *Nature Communications*, reports on the co-crystal structures of the CAP228 antibodies complexed with scaffolded V1V2 proteins. These antibodies recognize the same helix-coil V2 conformation as RV144 antibody CH58, identifying an alternative conformation of V1V2. This  $\alpha$ -helical form of V1V2 displays highly exposed  $\alpha$ 4 $\beta$ 7-binding sites, potentially providing a functional role for non-native envelope on virion or infected cell surfaces through blocking interactions with integrins.

The second paper published in *Cell Reports* by Charmaine van Eeden and Kurt Wibmer details the biological and genetic properties of the CAP228 mAbs. These mAbs resemble vaccine-elicited mAbs but make use of a novel antibody light chain and show broader ADCC activity against globally relevant V2 immunotypes.

This additional light chain increases the repertoire of B cells able to respond to RV144 V2 immunogens and opens up the possibility that vaccines based on RV144 (as is currently being tested in HVTN 702) may show higher levels of efficacy in South Africa.

### For further reading see:

Wibmer CK et al. *Nat Commun*. 2018; <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6203816/>  
van Eeden C et al. *Cell Reports* 2018; <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6342559/>

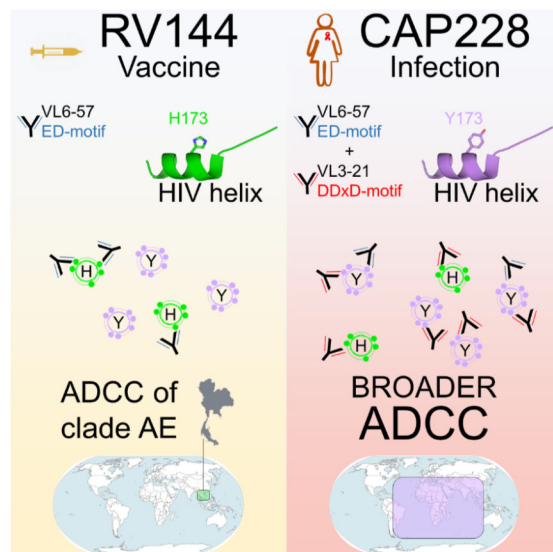
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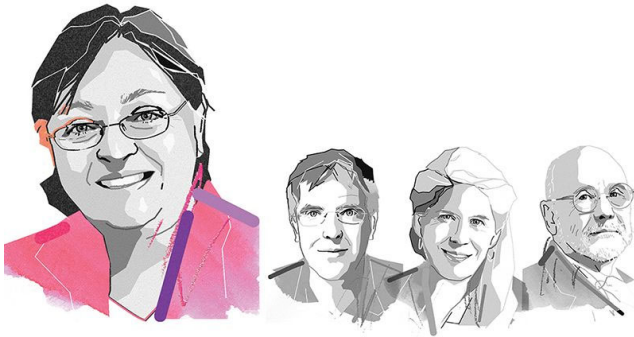


### Highlights

- V2-specific antibodies from HIV infection that resemble vaccine-elicited antibodies
- Use of a different antibody light chain with a different V2K169-binding motif
- Show broad ADCC activity against globally relevant V2 immunotypes
- Increases the repertoire of B cells able to respond to RV144V2 immunogens



# Nature features the 'life changing conference presentations' of four scientists



In the article titled, *Meeting Milestones* published in *Nature* on 19<sup>th</sup> December 2018, Abdool Karim recounted her presentation at the 18th International AIDS conference, held in Vienna Austria in 2010. The presentation was delivered at a special session at the conference, which was attended by several thousand delegates, where together with Salim Abdool Karim, she received a standing ovation for the presentation of the CAPRISA 004 trial results. These results were also listed by *Science* as one of the top 10 scientific breakthroughs in 2010.

**Q**uarraisha Abdool Karim, Associate Scientific Director at CAPRISA, was profiled in *Nature* together with three other leading scientists, on how conference presentations changed their career trajectories.

The article also featured Drew Ende (Stanford University California), Jill Bolte Taylor (University of Bloomington) and Jack Schultze (University of Toledo, Ohio). The article, which is part of Nature Events Guide 2019, can be accessed at: <https://www.nature.com/articles/d41586-018-07781-4>

## MIT & Ragon students visit CAPRISA



*Students from MIT and the Ragon Institute in the US spent an interactive day with researchers at CAPRISA on 23<sup>rd</sup> January. The scholars accompanied by Professor Bruce Walker, Director of the Ragon Institute of MGH, MIT and Harvard engaged with researchers at CAPRISA's Research clinic at Vulindlela on HIV Prevention studies that are underway. At CAPRISA's headquarters the students attended a lecture titled, "The HIV epidemic in South Africa: CAPRISA's research contributions", by Professor Salim Abdool Karim. Photo: Students at the CAPRISA Vulindlela Research clinic.*

## Congratulations Simone!

**C**ongratulations to Dr Simone Richardson who obtained her PhD degree on 4 December 2018 at the University of the Witwatersrand. Simone's PhD fo-

cus on defining the role of Fc effector function in Natural HIV-1 Infection. She was supervised by Professor Lynn Morris, Honorary Senior Scientist at CAPRISA & Interim

Executive Director at the National Institutes for Communicable Diseases (NICD) and Dr Nono Mkhize at the NICD.





## AAS honours CAPRISA scientists

Professor Quarraisha Abdool Karim received the African Academy of Science (AAS) Women Fellows in Leadership Recognition Award for her significant contributions to science in Africa and in her capacity as Vice President of Southern Africa on the AAS Governing Council and Professor Lynn Morris, honorary senior scientist at CAPRISA and Interim Executive Director at the National Institute of Communicable Diseases was inducted as a new Fellow of the AAS at an AAS General Assembly Meeting, held on 10-11 December 2018 in Pretoria. The eleventh general assembly of the AAS themed: "Our history, impact and the future" was officially opened by the South African Minister of Science and Technology, Mmamoloko Kubayi-Ngubane. In her address she said the AAS had "a crucial role to play in advancing African scientific enterprise".



Photo on the top: (L-R) Ameenah Gurib-Fakim (former President of Mauritius), Professor Felix Dapare Dakora (President of the African Academy of Sciences), Mmamoloko Kubayi-Ngubane (Minister of Science and Technology) and Professor Quarraisha Abdool Karim (Associate Scientific Director CAPRISA). Photo on the bottom: (L) Prof Lynn Morris CAPRISA Honorary Senior Scientist is being congratulated by Professor Felix Dapare Dakora.



## Honorary Associate Professorships for TB scientists



CAPRISA congratulates Drs Nesri Padayatchi (L), Deputy Director and Kogie Naidoo (R), Head of HIV and TB Treatment Research, on their appointments as Honorary Associate Professors in the School of Nursing and Public Health, in the College of Health Sciences at the University of KwaZulu-Natal. Padayatchi and Naidoo have made major scientific contributions in HIV-TB co-infection treatment research and in MDR and XDR TB treatment research.

## NIH funded Grant writing Training workshops



CAPRISA recently hosted two Grant Writing and Administration workshops for scientists in Africa and at CAPRISA as part of its NIH-funded Research Administration and Management Training Program. The workshops aimed to equip participants with skills in grant writing – from preparing applications to financial reporting and compliance. The workshop for colleagues in Africa (photo above), which was held in December 2018, was attended by research administrators and researchers from Zambia, Senegal and Nigeria. The workshop hosted in January 2019 was attended by 30 young investigators from CAPRISA.



# CAPRISA Annual Research and Awards Day

CAPRISA's annual research and awards day is a culmination of research and staff achievements over the past year. The event held on 28<sup>th</sup> January was a celebration of scientific achievements and was opened by Prof Busi Ncama deputy vice-chancellor of the College of Health Sciences, at UKZN. In her keynote address Ms Precious Matsoso, Deputy Director General in the national department of health in South Africa reflected on the scientific stature of CAPRISA in the country and on the African continent. Panellists: Alash'le Abimiku (Director: IHV-Nigeria), Izukanji Sikazwe (Director: CIRZDZ, Zambia), Glaudina

Loots (Director: Health Innovation DST) and Tom Nyirenda (Strategic Partnerships and Capacity Development Manager EDCTP) participated in a discussion on future research priorities facilitated by Quarraisha Abdool Karim. Salim Abdool Karim, Director of CAPRISA presented 5-year and 10-year long service awards to staff. Scientists and researchers who had successfully been awarded grants were also recognised together with staff who graduated. The photographs below capture the highlights of this special event.



Photos from top left to right: Busi Ncama, Panel members: Glaudina Loots (Director: Health Innovation DST), Izukanji Sikazwe (Director: CIRZDZ, Zambia), Tom Nyirenda (Strategic Partnerships and Capacity Development Manager EDCTP), Alash'le Abimiku (Director: IHV-Nigeria), Quarraisha Abdool Karim & Salim Abdool Karim.

Second Row (L-R): Long Service awardees for 5 and 10 year of service. Third Row (L-R): CAPRISA IspotU awardees, New Grant holders (2017&2018) and Achievement awardees.



# Scientific papers published in 2018

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CAPRISA hosts a DST-NRF Centre of Excellence in HIV Prevention



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CAPRISA is the UNAIDS Collaborating Centre for HIV Research and Policy



CAPRISA hosts a MRC HIV-TB Pathogenesis and Treatment Research Unit  
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