



SOUTH AFRICAN IMMUNOLOGY SOCIETY

NEWSLETTER

27 May 2022

Dear SAIS Members

Please find this week's newsletter. In this edition, we celebrate the achievements of Prof Penny Moore, our SuperScientist of the Month. Prof Moore's work focuses on HIV and SARS-CoV-2 vaccine discovery, combining virology, immunology and bioinformatics (see page 4 for the interview). Visit our social media platforms for more daily updates on SAIS webinars and news. We encourage all SAIS members to send us their recent publications for profiling in our Community Corner.

FUNDING CALLS, CONFERENCES, WEBINARS & ANNOUNCEMENTS

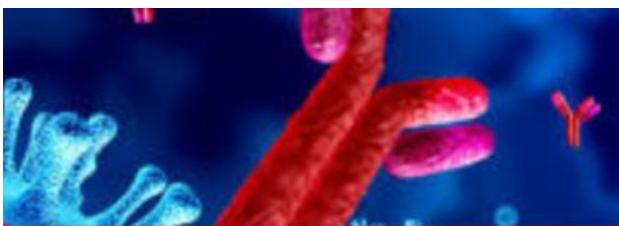
South African Immunology Society presents *An African Based Immunology Seminar Series*

For more information, please visit: <https://www.saimmunology.org.za/webinars.html>



The next monthly SAIS webinar features
Prof Shabir A. Madhi,
M.B.B.C.H. (Wits), FCPaed (SA), Ph.D.
15th June 2022 at 13:00-14:00 (GMT+1)

UNIVERSITY OF THE
WITWATERSRAND,
JOHANNESBURG



Leigh Kotze, PhD. Stellenbosch University

Establishment of a Patient-Derived, Magnetic Levitation-Based, 3D Spheroid Granuloma Model for Human Tuberculosis.

Webinar available on the SAIS website



L'OREAL- UNESCO for Women in Science Award

Please visit for www.forwomeninscience.com for more information

L'ORÉAL-UNESCO FOR WOMEN IN SCIENCE SOUTH
AFRICA NATIONAL YOUNG TALENTS PROGRAMME
2022

Closing date: 15 June 2022



11th IDA Symposium: 5-10 September 2022
Flow Workshop: 12-16 September 2022



Important Information:

- Participants will be accepted based on the scientific merit of their submitted abstracts
- Participants will be accepted from African countries
- Participants will be required to complete an Immunology Pre-Course on www.immunopaedia.org.za
- A full scholarship (travel and accommodation) will be awarded to selected African applicants to attend the 11th IDA symposium or the Flow Cytometry workshop or BOTH

Abstract submission deadline: 17 June 2022

For more information and registration please visit

<https://www.immunopaedia.org.za/course-registrations/11th-ida-symposium/>

20th Biennial Meeting of the European Society for Immunodeficiencies

For more information and abstract registration please visit <https://esidmeeting.org/abstract-submission/>



EAPD-IVI Online Vaccine Symposium: 07 June 2022

For more information, please visit <https://www.ivi.int/eapd-ivi-vaccine-symposium/>

**2022 EAPD-IVI
Online Vaccine Symposium**

Facing Forward:

Securing a Healthy Africa with
Vaccine Manufacturing



DATE: 7 June 2022

TIME: 8:00-10:00 am GMT
10:00 am- 12:00 pm (Cairo)
5:00-7:00 pm (Seoul)

IVI's 21st International Vaccinology Course: 26 - 30 September 2022, Seoul, Republic of Korea

For more information, please visit <https://www.ivi.int/international-vaccinology-course-2022/>



PUBLICATIONS & INTERESTING READS

Alarming increase in TB deaths emerging in COVID's wake

<https://www.tbonline.info/posts/2022/5/10/expert-alarming-increase-tb-deaths-emerging-covids/>

FDA approves Remdesivir for treatment of COVID-19 in children

<https://www.fda.gov/news-events/press-announcements/coronavirus-covid-19-update-fda-approves-first-covid-19-treatment-young-children>

Flu vaccine could cut COVID risk

https://www.nature.com/articles/d41586-022-01315-9?utm_source=Nature+Briefing&utm_campaign=d3dd4f8132-briefing-dy-20220517&utm_medium=email&utm_term=0_c9dfd39373-d3dd4f8132-46191682

Home testing for syphilis gains support in wake of COVID

<https://www.nature.com/articles/d41586-022-01363-1>

Inducing broad-based immunity against viruses with pandemic potential

[https://www.cell.com/immunity/fulltext/S1074-7613\(22\)00181-9](https://www.cell.com/immunity/fulltext/S1074-7613(22)00181-9)

Leveraging South African HIV research to define SARS-CoV-2 immunity triggered by sequential variants of concern

<https://onlinelibrary.wiley.com/doi/10.1111/imr.13086>

Neoantigen quality predicts immunoediting in survivors of pancreatic cancer

<https://www.nature.com/articles/s41586-022-04735-9>

Rapid molecular diagnostics to detect resistance to second-line anti-TB drugs

<https://pubmed.ncbi.nlm.nih.gov/35505483/>

Risk of vaso-occlusive episode after exposure to corticosteroids in patients With Sickle Cell Disease

https://www.practiceupdate.com/c/135265/1/18/?elsca1=emc_ews_expert-insight&elsca2=email&elsca3=practiceupdate_bh&elsca4=benignhematology&elsca5=newsletter&rid=NDY1Mzc5NzcwNTYyS0&lid=20849686

T cells are harder to fool

<https://www.nature.com/articles/s41590-022-01183-5.pdf?proof=t>

T-Cell Reactivity to the SARS-CoV-2 Omicron Variant in Immunized Individuals

https://www.practiceupdate.com/c/135130/75/24/?elsca1=emc_ews_weekinreview&elsca2=email&elsca3=practiceupdate_cv19&elsca4=cv19&elsca5=newsletter&rid=NDY1Mzc5NzcwNTYyS0&lid=31048597

Disease of the Month: Asthma

Advances and highlights in asthma in 2021

<https://onlinelibrary.wiley.com/doi/full/10.1111/all.15054>

Early Life Microbial Exposure and Immunity Training Effects on Asthma Development and Progression

<https://www.frontiersin.org/articles/10.3389/fmed.2021.662262/full#h3>



RESOURCES FOR IMMUNOLOGY LOVERS

<https://www.faisafrica.com>
<https://immunopaedia.org>

<https://iuis.org>
<https://www.stemcell.com/>

Socials to follow



@florian_krammer
@EurJImmunol
@socmucimm

COMMUNITY CORNER

Showcasing the bright minds of SAIS



Omicron infection enhances Delta antibody immunity in vaccinated persons

Nature. 2022 May 6. doi: 10.1038/s41586-022-04830-x. Online ahead of print

Khadija Khan, Farina Karim, Sandile Cele, Kajal Reedoy, James Emmanuel San, Gila Lustig, Houriyah Tegally, Yuval Rosenberg, Mallory Bernstein, Zesuliwe Jule, Yashica Ganga, Nokuthula Ngcobo, Matilda Mazibuko, Ntombifuthi Mthabela, Zoey Mhlane, Nikiwe Mbatha, Yoliswa Miya, Jennifer Giandhari, Yajna Ramphal, Taryn Naidoo, Aida Sivro, Natasha Samsunder, Aysha B M Kharsany, Daniel Amoako, Jinal N Bhiman, Nithendra Manickchund, Quarraisha Abdool Karim, Nombulelo Magula, Salim S Abdool Karim, **Glenda Gray, Willem Hanekom**, Anne von Gottberg, COMMIT-KZN Team, Ron Milo, Bernadett I Gosnell, Richard J Lessells, **Penny L Moore**, Tulio de Oliveira, Mahomed-Yunus S Moosa, Alex Sigal

Take-home message

In this study, the researchers isolated live Omicron/BA.1, Omicron/BA.2, ancestral, Beta, and Delta viruses and neutralized viruses with plasma from participants enrolled and longitudinally sampled during the Omicron/BA.1 infection wave in South Africa, with all participants having a confirmed diagnosis of SARS-CoV-2 by qPCR.

They determined SARS-CoV-2 variant neutralization capacity in 39 Omicron sub-lineage BA.1 infected individuals starting at a median of 6 (IQR 3-9) days post-symptom onset and continuing until a last follow-up sample at a median of 23 (IQR 19-27) days post-symptom onset to allow BA.1 elicited neutralizing immunity time to develop. Participants were vaccinated with Pfizer-BNT162b2 or J&J-Ad26.CoV2.S and had BA.1 breakthrough infections, while 24 were unvaccinated. BA.1 neutralization increased from a geometric mean titer (GMT) FRNT₅₀ of 42 at enrollment to 575 at the last follow-up time-point (13.6-fold) in vaccinated and from 46 to 272 (6.0-fold) in unvaccinated participants. Delta virus neutralization also increased, from 192 to 1091 (5.7-fold) in vaccinated and 28 to 91 (3.0-fold) in unvaccinated participants. At the last time-point, unvaccinated BA.1 infected individuals had 2.2-fold lower BA.1 neutralization, 12.0-fold lower Delta neutralization, 9.6-fold lower Beta variant neutralization, 17.9-fold lower ancestral virus neutralization, and 4.8-fold lower Omicron sub-lineage BA.2 neutralization relative to vaccinated, with low absolute levels of neutralization for the non-BA.1 viruses.

These results indicate that vaccination combined with Omicron/BA.1 infection hybrid immunity should be protective against Delta and other variants. In contrast, infection with Omicron/BA.1 alone offers limited cross-protection despite moderate enhancement.

SUPERSCIENTIST OF THE MONTH

Professor Penny Moore: Virologist

SUPERSCIENTISTS AFRICA

THE NEUTRALISER

PENNY MOORE
WITS UNIVERSITY

BORN: GP, SOUTH AFRICA
HARD WORK: 88
CREATIVITY: 83
CURIOSITY: 83
COMMUNICATION: 78

MY HEROES
TEACHERS ACROSS ALL LEVELS

TOP TIP
EMBRACE THE UNKNOWN WITH CURIOSITY, NOT NERVOUSNESS!

VIROLOGIST
WE STUDY ANTIBODIES THAT THE IMMUNE SYSTEM MAKES AGAINST HIV. THEY CAN HELP US DEVELOP A VACCINE OR ANTIBODY-BASED THERAPIES.

SANTHE

This May, we had the privilege of interviewing Prof Penny Moore, an esteemed virologist. Prof Moore is also a Research Professor and DST/NRF SARChI Chair of Virus-Host Dynamics at the University of the Witwatersrand and the National Institute for Communicable Diseases, and a Senior Research Associate at CAPRISA. Read her super insights below:

What has your experience been like as a scientist out of the lab environment? Do you miss the lab work?

No, I don't miss being in the lab. For me, the exciting part of science is working out what the question is, and how to answer it. I am very privileged - I get to ask questions, and have a wonderful team who generates data to answer them.

What skills do you think are unique to African scientists?

African scientists have to be resilient - it's a tough career anywhere, but especially in Africa where we face many additional challenges. But it's essential that we African scientists use our skills and determination to do good research that is relevant to our communities.

Your SuperScientist top tip was to "Embrace the unknown with curiosity, not nervousness". What advice do you have for young scientists to live by this philosophy? In what ways can they imbue a passion for science into their work?

I believe that curiosity, integrity and generosity are the key attributes for good scientists. You need to be addicted to asking and answering questions! In doing this, we get to discover new things, either small details or big leaps in knowledge, on a daily basis - which is incredibly wonderful.

<https://www.superscientists.org/superscientists/moore>



VACCINATION

Our best shot

Pioneered by Edward Jenner in the early 1800s, vaccination has since grown to be one of the most life-saving public health interventions. Vaccines protect the adult in every child and allow adults to protect themselves, their loved ones, and their communities from disease. We hope the resources below will empower you and those around you to take your health into your own hands. Don't wait. Vaccinate.

<https://www.who.int/health-topics/vaccines-and-immunization>
<https://www.humanvaccinesproject.org/>
<https://teamhalo.org/>

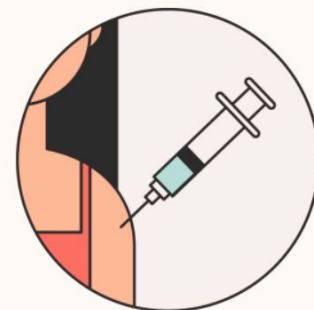
Mettelman, Allen & Thomas (2022). Mucosal immune responses to infection and vaccination in the respiratory tract
[https://www.cell.com/immunity/fulltext/S1074-7613\(22\)00184-4](https://www.cell.com/immunity/fulltext/S1074-7613(22)00184-4)

Kuraoka et al. (2022). Recall of B cell memory depends on relative locations of prime and boost immunization
<https://www.science.org/doi/10.1126/sciimmunol.abn5311>

National Institute for Communicable Diseases Vaccination Booklet
https://www.nicd.ac.za/wp-content/uploads/2017/08/NICD_Vaccine_Booklet_D132_FINAL.pdf

Rodrigues & Plotkin (2020). Impact of Vaccines; Health, Economic and Social Perspectives
<https://www.frontiersin.org/articles/10.3389/fmicb.2020.01526/full>

Pollard & Bijker (2020). A guide to vaccinology: from basic principles to new developments
<https://www.nature.com/articles/s41577-020-00479-7.pdf>



ASTHMA



World Asthma Day
May 3, 2022



aafa.org

Asthma is the most common inflammatory lung disease affecting over 339 million people of varying ages worldwide. There is no single cause or major risk factor that contributes to asthma development but rather the combination of several elements and their consequential inflammatory responses. During early life, asthma can be associated with factors such as C-section delivery, antibiotic usage, maternal low fiber diet, formula feeding, pollution and environmental exposure. These factors influence the microbiome leading to undesired changes to the immune system. By identifying these potentially modifiable risk factors for developing asthma, there has been a paradigm shift from disease treatment toward primary asthma prevention. Immune training approaches during pregnancy serve as asthma prevention. One approach for immune training could be managing the dysbiosis through a high-fiber diet intake during pregnancy, which results in changes in the gut microbiota, thus, increasing T-regulatory cell numbers and function.

Another approach for immune training is supplementation with probiotics and vitamins. Probiotics can modulate short chain fatty acid levels and alter the microbiome composition, while vitamin D influences immune cell function, corticosteroid responsiveness, oxidative stress, and airway remodeling.

In the postnatal period, controlling severe neonatal respiratory infections, breastfeeding, and enhancing other microbial exposure serve as asthma prevention measures. Additionally, the old-fashioned avoidance of allergenic foods strategy is being replaced by the tolerance strategy toward early exposure to allergens.

While it may be beneficial to use a combination of approaches to prevent asthma rather than one strategy, tackling asthma prevention remains a challenge. This is due to the knowledge gap on the immune pathways resulting in some infants developing asthma while others do not.

Full article (<https://www.frontiersin.org/articles/10.3389/fmed.2021.662262/full#h3>) found under “Publications & Interesting Reads” section.

JOBS & OPPORTUNITIES

Joint Academic Head - University of the Witwatersrand - Johannesburg, Gauteng

Qualifications: A medical qualification appropriate for a professorial appointment. A doctoral degree in the relevant field and/or peer-reviewed full publications on original research will be strongly advantageous. The preferred candidate must be appointed/appointable at the level of Associate Professor or Full Professor in the University. HPCSA registration would be an advantage. A minimum of seven years of postgraduate experience, of which at least five years are at senior level with demonstrable experience in managing research or diagnostic laboratory. To apply for this position, submit an application letter, a detailed CV with the names, addresses and contact numbers of three referees, and certified copies of degrees/diplomas to Human Resources, Faculty of Health Sciences, University of the Witwatersrand, Johannesburg, 7 York Road, Parktown, 2193. Apply via <https://irec.wits.ac.za>. Send all enquiries to Prof Johnny Mahlangu at Johnny.Mahlangu@wits.ac.za.

Laboratory Technician - Hutchinson Centre Research Institute of South Africa - Cape Town, Western Cape

This position is responsible for monitoring all specimen activities for the laboratory including specimen requests, tracking, receipt, inventory and shipping. This position will also assist with laboratory procurement, inventory management, equipment management and other laboratory work as needed. For more information, please visit <https://southafrica-fhrcr.icims.com/jobs/search>. Interested candidates should send their full Curriculum Vitae to Bongzi Vilakazi: svilakaz@hcrisa.org.za.

Regional Medical Liaison - Hutchinson Centre Research Institute of South Africa - Cape Town, Western Cape

The Regional Medical Liaison plays a key role in providing clinical support for clinical research sites (CRSs) implementing vaccine & prevention trials of the HVTN/CoVPN in Southern Africa. The position is based in Southern Africa and is part of the Clinical Development Unit, Leadership Operations Center (LOC) of the HVTN/CoVPN and reports to the Programme Lead/Protocol Team Lead. Qualifications and experience needed: A medical doctor (MBCbB, MBBS, MD or equivalent degree) with clinical experience in Southern Africa is strongly preferred. Postgraduate education in public health or clinical research or administration. For more information, please visit <https://southafrica-fhrcr.icims.com/jobs/search>. Interested candidates should send their full Curriculum Vitae to Bongzi Vilakazi: svilakaz@hcrisa.org.za.

Research Medical Officer (Allergy and Immunology Unit) - University of Cape Town Lung Institute - Mowbray, Western Cape

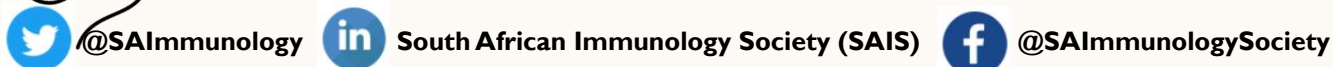
The Allergy and Immunology Unit (AIU), based at the University of Cape Town Lung Institute, require applications for a medical officer on a Fixed Term Contract. The Lung Institute is independent subsidiary of the University of Cape Town and is recognised internationally as a leader in the study of treatments for airways diseases, having performed more than 150 research projects field. Minimum Requirements: Medical Degree, registration with Health Professions Council of South Africa (HPCSA), and a keen interest in research. Application Deadline: 31 May 2022. For more information please contact: Noejfah Jardien: noejfah.jardien@uct.ac.za.

CONTACT US!

If you have any suggestions or feedback to improve this newsletter, feel free to contact us! Please send us your recent publications so we can showcase them in our Community Corner. If you are hiring/recruiting, we would be more than happy to advertise for you in the Newsletter and on our social media platforms. You can email the editors at newsletter@saimmunology.org.za by the 20th of each month to be featured in our next newsletter.

IMPORTANT LINKS

To renew your SAIS Membership please visit: <https://saimmunology.org.za/membership.htm>



With regards,
The SAIS Newsletter Editorial Team

Dr. Clement Adu-Gyamfi
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Co-Editor

Thanusha Pillay
Co-Editor

