VOLUME III / ISSUE 09



Dear SAIS Members,

Please find this week's newsletter. There are numerous interesting reads, and many jobs and opportunities are advertised. The SAIS conference committee is encouraging all members, students, and networks to register and present their exciting research works during our 9th SAIS conference in Johannesburg. An added excitement in this year's in-person conference is that there are lots of awards to be given to deserving presentations. Please check out our social media pages for more daily content on conference registration, abstracts, presentations, and conference speakers.

FUNDING CALLS, CONFERENCES, WEBINARS & ANNOUNCEMENTS

South African Immunology Society presents *An African Based Immunology Seminar Series* For more information, please visit: <u>https://www.saimmunology.org.za/webinars.html</u>



DR ERICA ANDERSEN-NISSEN

Dr Andersen-Nissen directs cellular immunology studies for the HIV Vaccine Trials Network (HVTN) in Southern Africa. She has worked extensively on profiling innate immune responses induced by candidate HIV vaccines to provide new information about human immune responses to experimental adjuvants and viral vaccine vectors.

Seminar title: Innate immune responses to candidate HIV vaccines

DATE: 28 SEPTEMBER 2022

TIME: 13:00

FUNDING OPPORTUNITY

AFRICA POSTDOCTORAL TRAINING INITIATIVE (APTI) FELLOWSHIP

Call for applications for APTI Fellowships | The AAS (aasciences.africa) **Closing date:** Friday 30th September 2022 at 17:00 East African Time (GMT +3).









2 - 4 October 2022 • Misty Hills Hotel Conference Centre and Spa



ABSTRACT SUBMISSIONS EXTENDED TO 7th AUGUST

The South African Immunology Society invites you to attend our 9th conference "Immunology Rediscovered: Breakthroughs in Immunology" from 2-4 October 2022. After two years of meeting virtually, this in - person event will showcase all the best immunology work going on locally and internationally, with a wide selection of world renowned speakers.

Topics will include vaccinology, infectious diseases, innate and adaptive immunity, tumour immunology, allergy, transplantation, and inborn errors of immunity, to name a few. The event will be held at the **Misty Hills Hotel**, **Conference Centre and Spa** nestled in the foothills of the Swartkop mountains in the beautiful Kromdraai Valley in Muldersdrift, Gauteng. Kromdraai falls within the Cradle of Humankind World Heritage Site; the birthplace of humankind. This is the perfect place to rediscover our human connections and passion for Immunology.

The conference will consist of both oral and poster presentations, and will include a cocktail networking function, as well as a gala dinner at the celebrated Carnivore restaurant. Abstract submission will open soon for consideration for short talks and posters. We cannot wait to gather again as a society and boost Immunology research in South Africa together. **Join us there!**

Early Bird Registration Closes 10th August

+27 21 486 9111 • conferencel@onscreenav.co.za • www.sais-bookings.co.za





Working together to get TB control back on track

WHAT TO LOOK FORWARD TO AT THE 7th SA TB CONFERENCE 13 - 16 September 2022, Durban ICC

With new TB diagnostics, drugs, and prevention measures on the horizon, it is critical that implementation strategies are effective and efficient. Join the 7th SA TB Conference from 13 - 16 September 2022 to hear about the latest in TB implementation and health systems research to ensure the tools we have are used optimally.

The conference, hosted at the ICC in Durban, provides a unique platform for key stakeholders - including leading clinicians, scientists, government, civil society, TB survivors, and others - to discuss opportunities and find solutions to get back on track to meet the TB targets for 2030 and 2035. For the first time since 2018, the conference will be held in-person, allowing space and time to meet and network.

Among the conference's confirmed plenary speakers are:



Ms Hendrietta Bogopane-Zulu Deputy Minister, Department of Social Development fultisectoral collaboration to impact TB indicators



Prof Digby Warner Professor in the Division of Medical Microbiology, University of Cape Town



Prof Keertan Dheda Head of Division of Pulmonology, Groote Schuur Hospital, University of Cape Town



Dr Limakatso Lebina Clinical Trials Unit Lead, Africa Health Research Institute



Dr Mohlopheni Marakalala Faculty member, Africa Health Research Institute



Dr Nkateko Mkhondo Technical Officer for TB, World Health Organisation



Prof Novel Chegou Head of TB Biomarker Lab, Stellenbosh University mmunology Research Group

To **register** for the Conference now click <u>HERE</u> To view the Conference **programme outline**, click <u>HERE</u>

For more information on the Conference, please visit <u>www.tbconference.co.za</u> and link to our social networks for discussions and updates at: Facebook: <u>https://www.facebook.com/SaTbConference/</u> Twitter: <u>https://twitter.com/ConferenceTb</u>



Replay from August 3rd





AIDS 2022

If you missed the live webinar you can now watch the replay video on http://www.arv-trials.com/





After almost three years, the spectacular return of the Gala Dinner affirms our freedom from lockdowns, fitting for Wits' Centenary celebrations. You are invited to a Special Wits Health Sciences Alumni Gala Dinner on Saturday, the 10th of September. Please visit https://www.wits.ac.za/events-archive/2022/fhs-alumni-week-2022-alumni-week-access-pass.html





WHO #EndTB webinar: Virtual launch of the Guidance for national strategic planning for TB Please visit https://www.tbonline.info/posts/2022/8/16/who-endtb-webinar-virtual-launch-guidance-national/

NEUROIMMUNOMETABOLISM - OBESITY AT THE CROSSROADS BETWEEN NEUROIMMUNITY AND IMMUNOMETABOLISM Joint Meeting with Interconnection between the Gut, Brain and Microbiome for Metabolic Disease

Organizers: Ana Domingos, and Alan Saltiel

For registration and other inquiries, please visit https://www.keystonesymposia.org/conferences/conference-listing/meeting?eventid=6923



OCTOBER 07 - 10, 2022

20TH BIENNIAL MEETING OF THE EUROPEAN SOCIETY FOR IMMUNODEFICIENCIES





GOTHENBURG, SWEDEN | 12-15 OCTOBER 2022

For more information, please visit: https://esidmeeting.org/



PUBLICATIONS & INTERESTING READS

Are blood cytokines reliable biomarkers of allergic disease diagnosis and treatment responses? https://www.jacionline.org/article/S0091-6749(22)00838-7/fulltext

Blood endotypic signature in atopic dermatitis: The challenge in personalized medicine https://www.jacionline.org/article/S0091-6749(22)00834-X/fulltext

Cancer vaccines: the next immunotherapy frontier https://www.nature.com/articles/s43018-022-00418-6

Epigenetic regulation of immune function in asthma https://www.jacionline.org/article/S0091-6749(22)00763-1/fulltext

Immune boosting benefits of TB vaccine seen in infants more than a year after vaccination https://www.sciencedaily.com/releases/2022/08/220805154346.htm

Immunogenicity to COVID-19 mRNA vaccine third dose in people living with HIV https://www.nature.com/articles/s41467-022-32263-7

Long-term HIV treatment outcomes and associated factors in sub-Saharan Africa: multicountry longitudinal cohort analysis

https://pubmed.ncbi.nlm.nih.gov/35608116/

No evidence that depression is caused by low serotonin levels, finds comprehensive review https://www.sciencedaily.com/releases/2022/07/220720080145.htm

Scent of a friend: Similarities in body odor may contribute to social bonding https://www.sciencedaily.com/releases/2022/06/220627125010.htm

The key to treating TB may be in a common carbohydrate. What we know so far https://theconversation.com/the-key-to-treating-tb-may-be-in-a-common-carbohydrate-what-we-know-so-far-188412

What were the historical reasons for the resistance to recognizing airborne transmission during the COVID-19 pandemic?

https://onlinelibrary.wiley.com/doi/10.1111/ina.13070

Your first brush with coronavirus could affect how a fall booster works https://www.washingtonpost.com/health/2022/08/22/coronavirus-immune-response-boosters/

ers/

DISEASE OF THE MONTH: POLIOMYELITIS

Mucosal immunity to poliovirus https://www.nature.com/articles/s41385-021-00428-0

Polio shows us the way for COVID https://typefully.com/famulare_mike/o7ZUHuD

Spate of polio outbreaks worldwide puts scientists on alert https://www.nature.com/articles/d41586-022-02233-6



COMMUNITY CORNER

Showcasing the bright minds of SAIS

Emergence of SARS-CoV-2 Omicron lineages BA.4 and BA.5 in South Africa

Authors: Houriiyah Tegally, Monika Moir, Josie Everatt, Marta Giovanetti, **Cathrine Scheepers**, Eduan Wilkinson, Kathleen Subramoney, Zinhle Makatini, Sikhulile Moyo, Daniel G. Amoako, Cheryl Baxter, Christian L. Althaus, Ugochukwu J. Anyaneji, Dikeledi Kekana, Raquel Viana, Jennifer Giandhari, Richard J. Lessells, Tongai Maponga, Dorcas Maruapula, Wonderful Choga, Mogomotsi Matshaba, Mpaphi B. Mbulawa, Nokukhanya Msomi, NGS-SA consortium, Yeshnee Naidoo, Sureshnee Pillay, Tomasz Janusz Sanko, James E. San, Lesley Scott, Lavanya Singh, Nonkululeko A. Magini, Pamela Smith-Lawrence, Wendy Stevens, Graeme Dor, Derek Tshiabuila, Nicole Wolter, Wolfgang Preiser, Florette K. Treurnicht, Marietjie Venter, Georginah Chiloane, Caitlyn McIntyre, Aine O'Toole, Christopher Ruis, Thomas P. Peacock, Cornelius Roemer, Sergei L. Kosakovsky Pond, Carolyn Williamson, Oliver G. Pybus, Jinal N. Bhiman, Allison Glass, Darren P. Martin, Ben Jackson, Andrew Rambaut, Oluwakemi Laguda-Akingba, Simani Gaseitsiwe, Anne von Gottberg & Tulio de Oliveira. Nature Medicine, June 2022.

Take Home Message

In this study, the researchers identified and showed how BA.4 and BA.5 predominantly drove the fifth wave of COVID-19 infections in South Africa. The spike proteins of BA.4 and BA.5 are identical, and similar to BA.2 except for the addition of 69–70 deletion (present in the Alpha variant and the BA.1 lineage), L452R (present in the Delta variant), F486V and the wild-type amino acid at Q493. The two lineages differ only outside of the spike region. The 69–70 deletion in spike allows these lineages to be identified by the proxy marker of S-gene target failure, on the background of variants not possessing this feature. BA.4 and BA.5 have rapidly replaced BA.2, reaching more than 50% of sequenced cases in South Africa by the first week of April 2022.

Using a multinomial logistic regression model, we estimated growth advantages for BA.4 and BA.5 of 0.08 (95% confidence interval (CI): 0.08–0.09) and 0.10 (95% CI: 0.09–0.11) per day, respectively, over BA.2 in South Africa. The continued discovery of genetically diverse Omicron lineages points to the hypothesis that a discrete reservoir, such as human chronic infections and/or animal hosts, is potentially contributing to further evolution and dispersal of the virus.

SUPERSCIENTIST OF THE MONTH

Professor Thumbi Ndung'u: Virologist



https://www.superscientists.org/superscientists/ ndungu This month, respected virologist Prof. Thumbi Ndung'u shared his wisdom with us. Prof. Ndung'u is the Director for basic and translational science at the Africa Health Research Institute and the Director of SANTHE. Among other appointments, he is also an investigator at the Max Planck Institute for Infection Biology Research, the Victor Daitz Chair in HIV/TB Research at UKZN and adjunct professor at the Harvard School of Public Health.

Can you share your perspective on emerging infectious diseases in relation to the changing dynamics of immunology and vaccinology?

We've seen tremendous growth in immunology with people pushing the frontiers of knowledge in the field. Without a doubt, immunology is one of the sciences of the future that is likely to change the way we diagnose and manage diseases of all sorts - including emerging infectious diseases, of course. If we look at SARS-CoV-2, a lot of what we've learnt has come from our knowledge and tools for HIV research. I believe this will continue to be the case as we learn more and drive immune-based interventions for all kinds of diseases - including HIV.

Do you have any advice for young immunologists navigating this current dynamic immunology landscape?

The first lessons are those that I learnt from my parents: you have to work hard, and show passion and devotion to what you are pursuing. Don't expect to go into a field and learn everything overnight, you need to be resilient. We live in the digital era so it's easy to believe that everything is instant, even acquiring knowledge. Hard work, resilience, and taking advantage of the opportunities offered to you is what will bear fruit. We also live in an age where collaboration and networking are very important, so develop these skills. We cannot work in silos - partnerships are what lead to successful and impactful science. Work with others, learn from others, and be generous to others.





JOBS & OPPORTUNITIES

Senior Lecturer in Immunology - University of Limpopo, Sovenga, Limpopo

The department seeks for a senior lecturer in immunology who will be responsible for teaching immunology modules to B.Sc. Medical Sciences, MBCHB, B.Nurs, and B.Sc in Dietetics programmes.

Qualifications: A Ph.D in Medical Immunology, a Postgraduate Diploma in higher education and training or studying toward the diploma in higher education will be an added advantage.

Experience: At least five years' experience employed in a tertiary institution. At least five years' experience working in an Immunology laboratory. An experience in supervision of postgraduate students in a tertiary institution. At least three SAPSE accredited publications. Proof of previous leadership in research or academic project.

Closing date: 26 August 2022. Typed applications containing a comprehensive curriculum vitae, certified copies of all qualifications and contact details of three referees should be forwarded for the attention of Ms N. Mthonti to the Chief Human Resources Officer; email applications in MS Word format to recruitment3@ul.ac.za

Training Manager (Contract) - Wits ALIVE, Johannesburg, Gauteng

Degree in health/science (e.g. vaccinology, immunology) and/or education/training field required and diploma in related field (training or project management) required. A valid driver's license and own transportation required. The main purpose of the job is to develop and coordinate training activities and ensure that events are of the highest standard. Apply on Wits-Alive website. **Closing date: 31 August 2022.**

Junior Research Fellow in Immunology (3-Year Contract) - Division of Medical Virology, Department of Pathology, Faculty of Health Sciences, University of Cape Town.

Applicants are invited for the above-mentioned position under the mentorship of Assoc. Prof. Wendy Burgers and Prof. Ntobeko Ntusi, based in the Division of Medical Virology, Institute of Infectious Disease and Molecular Medicine, Faculty of Health Sciences. **Requirements:** A PhD in Immunology or a related field and 2 to 5 years postdoctoral experience working in a research laboratory. To apply, please e-mail the below documents in a single pdf file to Ms Tracy Moore at recruitment05@uct.ac.za: UCT Application Form (download at http://forms.uct.ac.za/hr201.doc); Motivation letter that speaks to the requirement of the positions; Curriculum Vitae (CV). **Closing date: 18 September 2022.**

Postdoctoral Fellow in Human Immunology - Africa Health Research Institute, Durban, KwaZulu-Natal

Africa Health Research Institute (AHRI) seeks a postdoctoral candidate to work on an NIH-funded project exploring the impact of sex differences an investigating human immune development in the first 1000 days of life. This three-year postdoctoral position in the Leslie Group at AHRI in Durban. This project is part of an international collaborative project of experts in human immunology and infectious disease research based in South Africa (Alasdair Leslie and Veron Ramsuran), the UK (including Phillip Goulder, Paul Klennerman), and the US (Galit Alter). The project will therefore involve regular interactions with this extensive international research network and is an excellent opportunity for an ambitious postdoc looking to develop their career. **Qualifications and experience:** Ph.D. in a relevant subject (immunology, biology, or a related field). Please send a cover letter and CV with the subject listed as 'first 1000 days study' to education@ahri.org. Early applications are encouraged.

Technical Trainer in Immunology (Full time) - Ampath Trust, Centurion, Gauteng

Purpose of position: To train employees within the Immunology laboratory to ensure theoretical and practical competence and continuous improvement of skills. **Required experience:** 1-2 years working experience as a technologist within the field of Serology or Immunology, 2 years immunology experience as a Technologist/Medical Laboratory Scientist within a pathology laboratory environment, and general on-the-job training experience. **Knowledge requirements:** GCP/GLP; HPCSA regulations; Meditech system; MS Word and MS Excel; Occupational Health and Safety Act (OSHA); Quality Control; relevant syllabi; senior and/or supervisory or managerial experience, subject matter expertise with regards to laboratory procedures and instruments. Applicants must have a South African ID or a valid South African work permit. We do not accept any faxed or emailed CVs. If we have not contacted you within 14 days, please consider your application unsuccessful. Apply on company website.

Full or Associate Professor in Human Genetics and/or Genomics - University of Geneva, Switzerland

Genetics and/or genomics is one of the excellence strategic fields of the Faculty of Medicine. The incumbent will undertake research in this area at the highest national and international levels and secure external funding. He/She will have to develop strong links with clinicians based at the medical genetics service at the University Hospitals of Geneva, as well as with other researchers from Geneva lake area and particularly those located at the Genome Center at Campus Biotech. **Requirements:** Doctorate of Medicine (MD) or equivalent degree or Ph.D. **Closing date: 15th October 2022.** Additional information may be obtained from: viviane.burghardt@unige.ch



POLIOMYELITIS

Polio awareness week in South Africa: 6-13 August 2022

To successfully implement the polio endgame, immunization strategies should prevent paralytic disease, limit enteric viral replication, and minimize the transmission risk of potentially neurovirulent strains. Oral polio vaccine (OPV) is highly replicative in the gastrointestinal tract, inducing intestinal immunity and decreasing virus shedding upon subsequent exposure to live virus. Contrastingly, inactivated polio vaccine (IPV) has little effect on virus replication in the intestine after OPV challenge in individuals previously not exposed to live virus but induces strong systemic immunity and protection from paralytic disease. The type 2 component from trivalent OPV (tOPV) was removed due to safety concerns leading to a globally synchronized switch to the bivalent OPV (bOPV) in 2016. In addition, it was recommended that at least one dose of IPV was included in immunization strategies priming individuals against potential exposure to type 2 poliovirus and boosting population immunity against all three serotypes. Vaccination regimens made up of IPV, bOPV, and combinations thereof have been evaluated in clinical trials to assess seroconversion rates and virus shedding in response to a monovalent OPV (mOPV) challenge. Summarizing data on intestinal immunity from global clinical trials of bOPV and IPV regimens show distinctions emerge when enteric type-specific neutralizing responses to poliovirus are induced, related to different vaccine regimens and across age groups. Two weeks after mOPV2 challenge, the pattern of neutralizing antibody responses measured in stool shows a robust intestinal response to live-attenuated poliovirus occurring in infants. Usually, strong type-specific enteric neutralizing responses are seen in infants receiving a primary series of tOPV. Neutralizing titers in stool are readily detected in infants receiving a bOPV series or a combination of bOPV and IPV. However, a similar data analysis from older children and young adults shows a striking age-related reduction in the magnitude of the enteric polio-specific neutralizing response after OPV challenge. These findings suggest that, unlike infants, older children and adults may be less able to mount mucosal IgA responses to poliovirus in the intestine, despite enteric virus replication and strong type-specific serum antibody boosts. Is inducing intestinal immunity to poliovirus impaired or absent in adults, contrasting current evidence from infant studies? Current observations of an age-related decline in enteric mucosal IgA and virus neutralizing responses to OPV have clear implications for global eradication efforts. The safety and immunogenicity of novel type 2 oral poliovirus vaccines (nOPV2) with better genetic stability following intestinal passage are the subjects of promising new research. These investigations will contribute to our understanding of how poliovirus mucosal immunity is induced and controlled. Deploying nOPV2 and continuing clinical development of nOPV types 1 and 3 will offer vital new tools to help mitigate the risk of further seeding vaccine-derived virulent strains into vulnerable populations and reduce the number of polio cases associated with these outbreaks. This is important because of the increasing number of vaccine-derived poliovirus outbreaks occurring worldwide.

VACCINATION

Our best shot

Dr Edward Jenner, the "Father of Vaccination", was a British physician and scientist who began the era of vaccination, including creating the world's first vaccine. Vaccination is one of the most life-saving public health interventions, allowing children and adults to protect themselves, their loved ones, and their communities from various diseases. In this newsletter edition, we hope the resources provided will shed light on various misconceptions about vaccines, and empower you and those around you to take your health into your own hands. Don't wait. Vaccinate.

VACCINE MISCONCEPTIONS

- 1. "Overloaded Immune System" When the childhood immunization schedule expanded to include more vaccines, parents were concerned about "overloading" the child's immune system. Studies have repeatedly shown that the recommended vaccines are no more likely to cause adverse effects when given in combination than when administered separately.
- 2. "Hygiene and Better Nutrition Are Responsible for the Reduction in Disease Rates, Not Vaccination" Improved hygiene and nutrition lowers the incidence of some diseases, however, documented data show that vaccines are overwhelmingly responsible for the largest drops in disease rates. The best evidence that vaccines are responsible for the sharp drop in disease and death rates is chickenpox. If hygiene and nutrition alone were enough to prevent infectious diseases, chickenpox rates would + have dropped long before the introduction of the varicella vaccine.



https://historyofvaccines.org/vaccines-101/misconceptions-about-vaccines



Operation Nasal Vaccine—Lightning speed to counter COVID-19 https://www.science.org/doi/10.1126/sciimmunol.add9947

Restricting use of adenovirus vector-based COVID vaccines could endanger public and global health https://www.frontiersin.org/articles/10.3389/fimmu.2022.985382/full

Scientific review articles as antivaccine disinformation https://sciencebasedmedicine.org/scientific-review-articles-as-antivaccine-disinformation/

RESOURCES FOR IMMUNOLOGY LOVERS

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

https://iuis.org https://www.stemcell.com/ Socials to follow

@Thumbi_Ndungu @VirusesImmunity @vaccine_trust



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

@SAImmunology

South African Immunology Society (SAIS)

@SAImmunologySociety

With regards, The SAIS Newsletter Editorial Team

Dr. Clement Adu-Gyamfi Editor

Sashkia Balla Co-Editor

Thanusha Pillay Co-Editor

