

SOUTH AFRICAN IMMUNOLOGY SOCIETY

NEWSLETTER

MESSAGE FROM THE EDITOR

Dear SAIS members,

Compliments of the new year! Welcome to our February 2023 SAIS newsletter. Firstly, we want to warmly welcome our colleagues from the South African Veterinary Immunology Society (SAVIS) to our fold - thank you to Laura and Christine for joining the editorial team. The SAVIS consists of SAIS members with a particular interest in veterinary immunology. We hope this will increase the visibility of veterinary immunology and its practice in South Africa.

For this year, the SAIS newsletter will continue to publish interesting articles/conference announcements, job postings, and "Community Corner" features to publicize publications from within the SAIS network. Please let us know of all your publications so that we stay informed of the news from within our SAIS community.

We entreat all SAIS members and networks to follow us on our social media platforms (Facebook, Twitter, and LinkedIn). We will post more daily content on these social media pages.

Thank you, as always, for being with us!



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.



<https://www.saimmunology.org.za/>



@SAImmunologySociety



South African Immunology Society (SAIS)



@SAImmunology

NEW YEAR MESSAGE FROM THE SAIS PRESIDENT

Dear SAIS members

It is with great excitement that we start this year, which I believe will be one of the greatest years in the history of Immunology in South Africa. The executive committee has been hard at work to restructure the Society to align with the requirements of NPO and PBO registration. We are also very pleased to announce that Lindiwe Mashologu has been appointed as SAIS administrator. She is actively working on a new SAIS website that will have a completely different look and feel, and will facilitate sharing of news and events, and streamline the membership payment process. Our media team (Thanusha Pillay, Sashkia Balla and Clement Gascua) has similarly refreshed the monthly newsletter and has already launched a fabulous measles vaccination campaign this year.

In line with the goals set out in our Constitution, the Society will be co-hosting a conference with ALLSA this year with the intention of bridging the gap between the bench and the bedside. We will also be partnering with local and international organisations, such as the Binding Site Group, to increase awareness and create opportunities for training in the field of Inborn Errors of Immunity. All this information will be available on the new website which will be launched in March 2023. Also keep an eye out for our monthly webinars, which have become increasingly popular under the capable leadership of Dr Sabelo Hadebe and Dr Nancy Meulenberg.

We are also looking forward to welcoming our veterinary colleagues on board. They are in the process of formally organising into a Chapter of SAIS. We look forward to working with them to facilitate transdisciplinary interaction between the fields.

Finally, this year will see the IUIS congress coming to South Africa (and Africa) for the first time. This is a momentous occasion. As the hosting Society, we look forward to welcoming our international colleagues to our beautiful country with a warm South African welcome. We are also excited about the opportunity to interact with and learn from the best minds in Immunology in the world. Please make sure that your SAIS membership is up to date since this will unlock discounted registration fees to enable more local researchers and scholars to attend this prestigious conference. Abstracts are open and you are all encouraged to submit your work!



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FUNDING CALLS, CONFERENCES, WEBINARS



WHERE IMMUNOLOGISTS MEET

18th International Congress of Immunology
27 November - 2 December 2023 | Cape Town, South Africa

Supported by



IUIS2023.org

Open registration and abstract submission: <https://iuis2023.org/registration-fees/>



Proudly sponsored by:



Register at:
iuis2023.org

IVIS2023: Kruger National Park, South Africa, 17 - 21 November 2023



IUIS/AAI TRAVEL AWARDS SUMMER COURSES in IMMUNOLOGY

IUIS/AAI Travel Awards: Summer Courses in Immunology

The IUIS Education (EDU) and Gender Equality and Career Development (GEC) Committees and the American Association of Immunologists (AAI) announced their continued co-sponsorship of 8 awards (4/course) for trainees from LMICs to attend the AAI Summer Courses in IMMUNOLOGY:

1. The Introductory Course in Immunology will be held July 11-16, 2023 at the UCLA Luskin Conference Center, Los Angeles, CA.
2. The Advanced Course in Immunology will be held July 23-28, 2023 at The Westin Copley Place, Boston, MA.
- 3.

For more information visit:

<https://www.faisafrica.com/news/iuis-aa-awards-summer-courses-in-immunology>

IUIS/AAI Travel Awards: Courses in Immunology, USA, July 2023



Find a comprehensive list of Scholarships for African Women and Developing countries for the 2023/2024 academic year:

<https://www.afterschoolafrica.com/255/international-scholarship-women-in-africa/amp/>

List of Scholarships for African Women 2023/2024

THE VETERINARY IMMUNOLOGY DIVISION: AN INTRODUCTION



South African Veterinary Immunology Society (SAVIS) Conference

In September 2022, 25 researchers from 7 institutions, representing academia, the state, and industry, met to discuss establishing a professional forum for the advancement of veterinary immunology in South Africa. The meeting was made possible through financial support by the IUIS Veterinary Immunology Committee (VIC) and opened with an address by Prof Theresa Rossouw, the President of the South African Immunology Society (SAIS), who spoke about the history, functioning, and planned future of SAIS.

SAVIS forms under the umbrella of the SAIS

Day 1 consisted of “meet-and-greet” sessions, which gave representatives of institutions involved in veterinary immunology an opportunity to showcase their work and identify needs and opportunities within the discipline. On Day 2 an open floor discussion was held on the potential benefits of initiating a formal association of veterinary immunologists in South Africa, and an unanimous decision was taken to organize under the auspices of SAIS. An interim steering committee has initiated engagement with the SAIS Board on the formation of a veterinary interest group with overarching aim of addressing **One Health**.

ONE HEALTH: A GLOBAL INITIATIVE

What is One Health?

One Health is a collaborative, trans-disciplinary approach that recognizes that the health of humans is closely related to the health of animals and our shared environment.

Why is One Health Important?

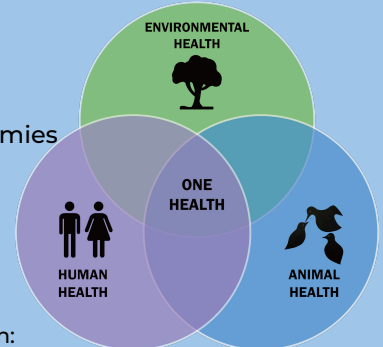
- Diseases can be transmitted between animals, humans and the environment.
- Increased international trade and travel results in the increased movement of humans, animals and animal products, which in turn allows for an increased spread of disease.
- People often live in close contact with wild and domestic animals, which increases the possibility for disease transmission.
- Environmental change due to factors such as climate change, land use and the expansion of growing populations into new geographic areas. This can allow for new diseases to be contracted by animals and/or humans.

Common One Health Issues

- Emerging, re-emerging and endemic zoonotic diseases
- Neglected tropical diseases
- Vector-borne diseases
- Livestock diseases which can threaten food supplies and global economies
- Contamination of the shared environment, e.g. water or soil

One Health Initiatives

- To prevent outbreaks of zoonotic diseases
- To improve human and animal health
- To improve food safety and security
- To protect global health security
- To protect biodiversity and conservation



For more information:
CDC One Health Basics
WHO - One Health Questions and Answers

PUBLICATIONS & INTERESTING READS

Human

DNA replication-associated inborn errors of immunity

Willemssen *et al.* 2023. *Journal of Allergy and Clinical Immunology*. 151(2), pp 349-360.
doi.org/10.1016/j.jaci.2022.11.003

Five things you need to know about Equatorial Guinea's Marburg outbreak

Joi, P. 2023. Gavi - The Vaccine Alliance.
<https://www.gavi.org/vaccineswork/five-things-know-about-marburg>

Human natural killer cells: Form, function, and development

Mace, E. 2023. *Journal of Allergy and Clinical Immunology*. 151(2), pp 371-385.
doi.org/10.1016/j.jaci.2022.09.022

Interleukin-1 receptor-associated kinase-3 acts as an immune checkpoint in myeloid cells to limit cancer immunotherapy

Tunali, G *et al.* 2023. *Journal of Clinical Investigation*. e161084. doi: 10.1172/JCI161084

Is it bad, is it good, or is IgG4 just misunderstood?

Pillai, S. 2023. *Science Immunology*. First release, eadg7327. doi: 10.1126/sciimmunol.adg7327

Management of patients with immediate reactions to COVID-19 vaccines

Picard, M, Stone, C, & Greenhawt, M. 2023. *Journal of Allergy and Clinical Immunology*. 151(2), pp 413-415.
doi.org/10.1016/j.jaci.2022.09.003

New-age vaccine adjuvants, their development, and future perspective

Verma *et al.* 2023. *Frontiers in Immunology*. 14. doi.org/10.3389/fimmu.2023.1043109

RSV Vaccines That Work?

Gorman, RM. 2023. *The Scientist Magazine*.
<https://www.the-scientist.com/news-opinion/rsv-vaccines-that-work-70956>

Targeting Antigen “Sanctuary” in Lymph Nodes Could Make Vaccines Better

Mesa, N. 2023. *The Scientist Magazine*
www.the-scientist.com/news-opinion/targeting-antigen-sanctuary-in-lymph-nodes-could-make-vaccines-better-70943

The diagnosis of severe combined immunodeficiency (SCID): The Primary Immune Deficiency Treatment Consortium (PIDTC) 2022 Definitions

Dvorak *et al.* 2023. *Journal of Allergy and Clinical Immunology*. 151(2), pp 539-546.
[doi: 10.1016/j.jaci.2022.10.022](https://doi.org/10.1016/j.jaci.2022.10.022)

Third patient free of HIV after receiving virus-resistant cells

Reardon, S. *Nature News*. <https://www.nature.com/articles/d41586-023-00479-2>

Your brain could be controlling how sick you get — and how you recover

Kwon, D. *Nature News*. <https://www.nature.com/articles/d41586-023-00509-z>

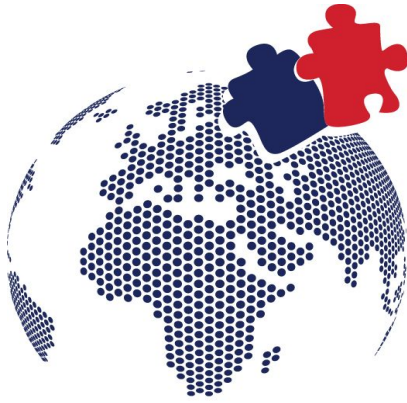
Veterinary

Cellular and humoral immune responsiveness to inactivated *Leptospira interrogans* in dogs vaccinated with a tetravalent *Leptospira* vaccine.

Novak, A., *et al.* 2023. *Vaccine*. 41, pp. 119-129. doi: 10.1016/j.vaccine.2022.11.017.

Protective immunity of plant-produced African horse sickness virus serotype 5 chimeric virus-like particles (VLPs) and viral protein 2 (VP2) vaccines in IFNAR-/- mice.

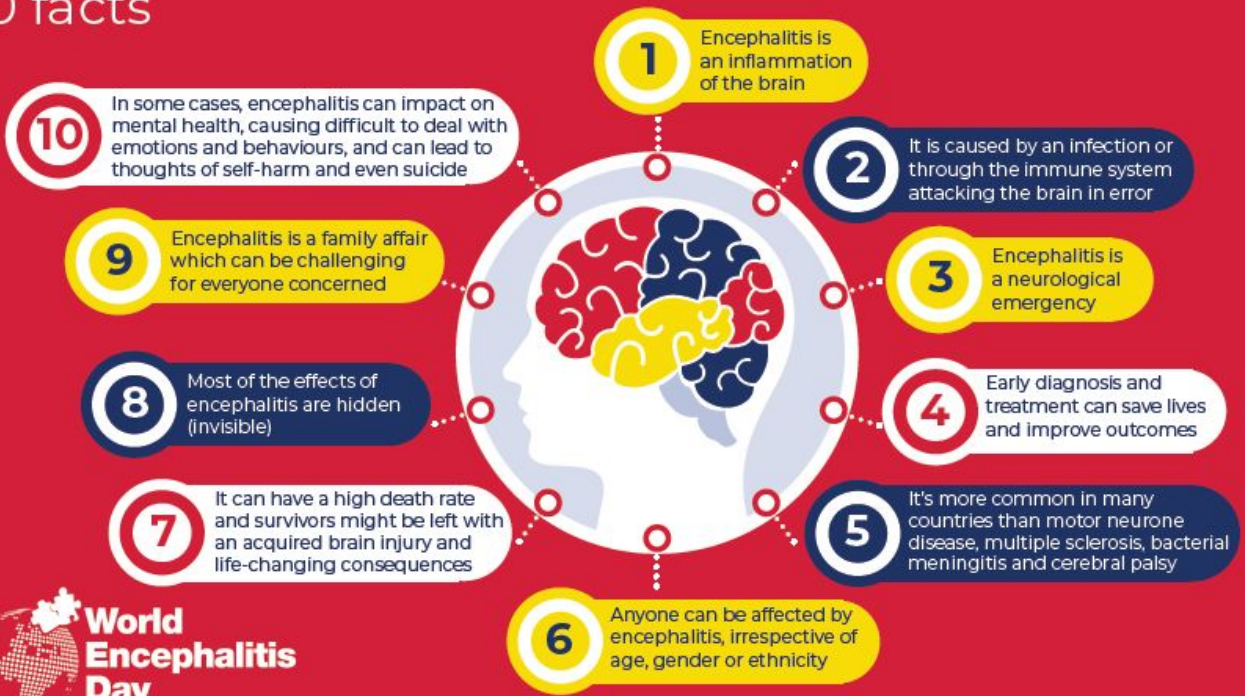
O'Kennedy, M. M., *et al.* 2022. *Vaccine*. 40, pp. 5160-5169 doi: 10.1016/j.vaccine.2022.06.079.



World[®] Encephalitis Day 22nd February

Encephalitis 10 facts

77% of people worldwide do not know what encephalitis is. Here are ten facts about this often devastating neurological condition for World Encephalitis Day on 22nd February



www.encephalitis.info

Encephalitis Society is a registered Charity and Charitable Company. Our England and Wales Charity No. is 1087843 and our Charitable Company No. is 04189027. Our Charity No. in Scotland is SC048210.



The 22nd of February marks World Encephalitis Day. In light of the ongoing measles outbreak in South Africa, which has now reached over 580 confirmed cases, we want to raise awareness for one of the more deadly measles complications - measles encephalitis.

Following measles infection, 1 in every 1000 children can develop encephalitis, which can cause convulsions, deafness, and intellectual disability. In rarer cases, some children will develop subacute sclerosing panencephalitis (SSPE), 6 - 8 years after the initial measles infection. There is no cure for SSPE and most children with this condition die within 3 years of diagnosis.

The only way to prevent the debilitating and sometimes fatal complications of measles, is to get vaccinated.

You have the power to protect your child from measles

Measles is more than just a little rash

MEASLES IS EXTREMELY CONTAGIOUS



Measles is one of the most contagious diseases in the world - if one person has measles, 9 in 10 people around them will also become infected if they are not protected. An infected person can spread measles without even knowing they are infected.

Measles is spread by coughing or sneezing, close personal contact with an infected person, or direct contact with nasal and throat secretions. The virus is still infectious in the air and on surfaces for up to 2 hours. This means your child can become infected with measles just by sharing a room with someone who has measles, even if it's been 2 hours since that person left.

MEASLES IS A VERY SERIOUS VIRAL DISEASE

Many people believe measles is just a rash and fever that will clear up in a few days, but measles can lead to serious health complications - especially in young children under 5, malnourished children, and people with weakened immune systems (such as people living with HIV and those with autoimmune conditions).

Measles continues to be one of the leading causes of child mortality worldwide, despite there being an effective measles vaccine. There is no specific antiviral medication for measles.

SOME COMMON SYMPTOMS



Early measles symptoms are quite similar to cold symptoms, such as:

- fever
- runny or blocked nose
- sneezing and/or coughing
- red, sore, watery eyes

After a few days:

- there may be some white spots inside the cheeks and behind the lips
- a rash on the face and neck may appear, before spreading to the rest of the body. The spots may be slightly raised and usually clump together and look splotchy. The rash is usually not itchy or painful and there are no blisters
- the rash usually looks red/brown on light skin, but may be difficult to see on darker skin tones

SERIOUS COMPLICATIONS



One out of every 1000 infected people will experience serious complications and/or hospitalisation. Complications include:

- severe diarrhoea
- ear infections
- blindness
- pneumonia
- encephalitis (swelling of the brain)
- death

PROTECT YOUR CHILD FROM MEASLES WITH A SAFE VACCINE



There is no way to predict how sick your child may become if they get infected. The best protection is the measles-mumps-rubella (MMR) vaccine, which provides life-long protection against all strains of measles. Your child needs two doses for the best protection (one dose at 6 months and the second dose at 12 months of age).

The MMR vaccine is safe and is 97% effective against measles after two doses. If you have any concerns about the safety of vaccines, talk to your doctor so you can make an informed choice for yourself and your loved ones.

For more information, please visit:

Center for Disease Control and Prevention. Top 4 Things Parents Need to Know about Measles

National Institute for Communicable Diseases. Diseases A-Z Index: Measles

NHS UK. Health Index A - Z, Measles

World Health Organization. Measles Fact Sheet

JOBS & OPPORTUNITIES

Postdoctoral Researcher - Johns Hopkins University and HHMI, Baltimore, Maryland (US)

Several postdoctoral researcher positions are available in Dr. Xin Chen's laboratory at Johns Hopkins University. We are interested in how epigenetic mechanisms regulate cell fate determination, maintenance and change during development, homeostasis and disease in multicellular organisms. We use several model organisms, including *Drosophila*, *C. elegans* and mouse, and apply interdisciplinary approaches using genetics, molecular biology, cell biology, genomics and biophysics approaches.

Details of our research can be found at: <https://bio.jhu.edu/directory/xin-chen/> and <https://www.hhmi.org/scientists/xin-chen>. The candidate should have a Ph.D. in Molecular and Cell Biology, Developmental Biology, Genetics, Biochemistry, or related areas. The candidate who has biophysics, bioinformatics, or systems biology background will be a plus. The candidate is expected to have good communication and scientific writing skills.

For interested candidates, please send your curriculum vitae and contact information of three referees to Dr. Xin Chen by email at xchen32@jhu.edu.

Postdoctoral Research Associate - National Academies of Sciences, USA

The National Academies of Sciences, Engineering, and Medicine administers postdoctoral and senior research awards at participating federal laboratories and affiliated institutions at locations throughout the U.S and abroad.

We are seeking highly qualified candidates who hold, or anticipate earning, a doctorate in a variety of fields of science or engineering. Degrees from foreign universities should be equivalent in training and research experience to a doctoral degree from a U.S. institution. Citizenship eligibility varies among the sponsoring laboratories. For detailed program information, to search Research Opportunities, and to contact prospective Research Adviser(s) visit www.nas.edu/rap.

Residency/Graduate Studies (MS or PhD) training position - Veterinary Clinical Pharmacology - Kansas State University, USA

The College of Veterinary Medicine at Kansas State University invites applications for a combined Residency/Graduate Studies (MS or PhD) training position in Veterinary Clinical Pharmacology within the Departments of Anatomy & Physiology and Clinical Sciences. The 3-year training program begins 1st June 2023. Contact person: Dr Michael Kleinhenz. Email: mkleinhe@vet.k-state.edu. Tel.: 785 532 4478

MSc position - Department of Veterinary Tropical Diseases- University of Pretoria, South Africa

Project title: Unravelling drivers of antibiotic use among farmers in Gauteng in a One Health Context. Minimum academic requirements: an honours degree in or equivalent in a relevant field (e.g. microbiology, veterinary science, epidemiology, pharmacy, public health) or similar suitable qualification. Funding is available for project and related accommodation costs. Contact person: Prof. Vinny Naidoo. Email: vinny.naidoo@up.ac.za. Tel.: +27(0)12 529 8185.

Post-doctoral fellowship position - Department of Veterinary Tropical Diseases- University of Pretoria, South Africa

Fellowship duration of 3 years. The candidate should possess a PhD degree with experience in molecular biology techniques. The responsibilities involve participating in ongoing research projects and providing support to PhD and MSc students in the Theileria and Foot-and-Mouth Research Programmes. Contact person: Prof. Kgomotso Sibeko-Matjila. Email: kgomotso.sibeko@up.ac.za. Tel.: +27(0)12 529 8402.

COMMUNITY CORNER



T cell receptor repertoires associated with control and disease progression following Mycobacterium tuberculosis infection

Munyaradzi Musvosvi, Huang Huang, Chunlin Wang, Qiong Xia, Virginie Rozot, Akshaya Krishnan, Peter Acs, Abhilasha Cheruku, Gerlinde Obermoser, Alasdair Leslie, Samuel M. Behar, Willem A. Hanekom, Nicole Bilek, Michelle Fisher, Stefan H. E. Kaufmann, Gerhard Walzl, Mark Hatherill, Mark M. Davis, **Thomas J. Scriba**, Adolescent Cohort Study team & GC6-74 Consortium

Take-home-message: Antigen-specific, MHC-restricted $\alpha\beta$ T cells are necessary for protective immunity against Mycobacterium tuberculosis (mtb), but the ability to broadly study these responses has been limited. In this study, the researchers used single-cell and bulk T cell receptor (TCR) sequencing and the GLIPH2 algorithm to analyze mtb-specific sequences in two longitudinal cohorts, comprising 166 individuals with mtb infection who progressed to either tuberculosis (n = 48) or controlled infection (n = 118).

They found 24 T cell groups with similar TCR- β sequences, predicted by GLIPH2 to have common TCR specificities, which were associated with control of infection (n = 17), and others that were associated with progression to disease (n = 7). Using a genome-wide mtb antigen screen, they identified peptides targeted by T cell similarity groups enriched either in controllers or in progressors. The authors propose that antigens recognized by T cell similarity groups associated with control of infection can be considered as high-priority targets for future vaccine development. Analysis of peripheral mycobacteria-reactive CD4+ T cell receptor sequences from individuals infected with mtb shows a high degree of overlap between progressors and controllers, but points to some distinct clonotypes that are enriched in either group.

RESOURCES

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

SOCIALS TO FOLLOW

@AfricaCDC
@Neurofourier
@famulare_mike

SAIS would like to thank all members for your ongoing support! To continue being a part of our growing community, please keep up to date with your membership. To update your membership and familiarise yourself with the new renewal process, please visit <https://www.saimmunology.org.za/membership.htm>

Thank you for reading,
The SAIS Newsletter Editorial Team

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