

SAIS NEWSLETTER – APRIL 17TH, 2020

Dear SAIS members

Please find this week's newsletter below. The next newsletter will be sent out on Friday, 1 May 2020.

FUNDING CALLS, CONFERENCES, WEBINARS and ANNOUNCEMENTS

WEBINAR: Rino Rappuoli on COVID-19 Vaccines, Monday 6 April 2020, 15:00 CEST

How long will it really take to develop a vaccine for COVID-19, and how is science speeding up the process? Rino Rappuoli, Chief Scientist and Head of Research & Development at GlaxoSmithKline, shares his insights as a world expert in vaccine development. To register, please visit:

https://iuis.org/webinars/?utm_source=IUIS+Newsletter&utm_campaign=9f66cb387a-IUIS_Newsletter_Q4_2017_COPY_01&utm_medium=email&utm_term=0_a910cd5922-9f66cb387a-120410941

WEBINAR: Chemical Probes as Essential Tools for Biological Discovery, 16 April 2020, 12 pm ET

This webinar aims to provide researchers involved in developing and using chemical probes with practical suggestions to help select the most appropriate research tools along the path to amazing discoveries! For more information, please visit:

<https://www.workcast.com/register?cpak=5713619125464983&referrer=ETOC>

ASCB Webinar: Navigating the K99/R00 grant process - 8 April 2-3 PM EDT

For registration and more info, please visit:

https://zoom.us/webinar/register/WN_zuBlyJJQRA2XxVSm9DuxEA

FutureLearn COVID-19 Diagnostics and Testing Course - starting April 20 2020

Get the latest recommendations on COVID-19 diagnostics and testing, and how to improve testing capacity in low-income settings. For more information, please visit: <https://www.futurelearn.com/courses/covid-19-diagnostics-and-testing>

WEBINAR: Every cell has its place: In situ sequencing of tissue samples at single-cell resolution, 22 April 2020, 12:00 p.m. ET

For more information and to register please visit: <https://www.sciencemag.org/custom-publishing/webinars/every-cell-has-its-place-situ-sequencing-tissue-samples-single-cell>

Does coronavirus spread through the air, and the biology of anorexia

<https://www.sciencemag.org/podcast/does-coronavirus-spread-through-air-and-biology-anorexia>

PUBLICATIONS and INTERESTING READS:

New airway-hugging immune cells discovered in the lung

<https://www.labroots.com/trending/immunology/17190/airway-hugging-immune-cells-discovered-lung>

Link to research article: <https://immunology.sciencemag.org/content/5/45/eaax8756>

Identifying the immune interactions underlying HLA class I disease associations

<https://elifesciences.org/articles/54558>

LIVE VACCINES HAVE DIFFERENT NK CELLS AND NEUTROPHILS REQUIREMENTS FOR THE DEVELOPMENT OF A PROTECTIVE IMMUNE RESPONSE AGAINST TUBERCULOSIS

<https://www.frontiersin.org/articles/10.3389/fimmu.2020.00741/abstract>

Endocrine and metabolic link to coronavirus infection

<https://www.nature.com/articles/s41574-020-0353-9>

Is the coronavirus airborne? Experts can't agree

<https://www.nature.com/articles/d41586-020-00974-w>

Neutralizing Antibodies against SARS-CoV-2 and Other Human Coronaviruses

[https://www.cell.com/trends/immunology/fulltext/S1471-4906\(20\)30057-0](https://www.cell.com/trends/immunology/fulltext/S1471-4906(20)30057-0)

A Genomic Perspective on the Origin and Emergence of SARS-CoV-2

[https://www.cell.com/cell/fulltext/S0092-8674\(20\)30328-7](https://www.cell.com/cell/fulltext/S0092-8674(20)30328-7)

Phage capsid against influenza: perfectly fitting inhibitor prevents viral infection

A new approach brings the hope of new therapeutic options for suppressing seasonal influenza and avian flu.

<https://www.fv-berlin.de/en/info-for/the-media-and-public/news/phagen-kapsid-gegen-influenza-passgenauer-inhibitor-verhindert-virale-infektion>

Trial drug can significantly block early stages of COVID-19 in engineered human tissues

<https://news.ubc.ca/2020/04/02/ubc-led-study-finds-trial-drug-can-significantly-block-early-stages-of-covid-19-in-engineered-human-tissues/>

South Africa's ruthlessly efficient fight against coronavirus

<https://www.bbc.com/news/world-africa-52125713>

Salivary gland macrophages and tissue-resident CD8+ T cells cooperate for homeostatic organ surveillance

<https://immunology.sciencemag.org/content/5/46/eaaz4371.full>

New drug target found for COVID-19

Scientists discover critical protein that lets virus hide from immune system.

<https://news.northwestern.edu/stories/2020/03/new-drug-target-found-for-covid-19/>

The clock that controls spine development modelled in a dish

<https://www.nature.com/articles/d41586-020-00322-y>

How sewage could reveal true scale of coronavirus outbreak

<https://www.nature.com/articles/d41586-020-00973-x>

Potential New COVID-19 Vaccine is Delivered by Patch

<https://www.labroots.com/trending/immunology/17228/potential-covid-19-vaccine-delivered-patch>

Macrophages get a CAR

<https://www.nature.com/articles/s41577-020-0302-9>

Decoding Covid-19: SANBI Scientists Peek Inside First South African SARS-CoV-2 Genome

<https://www.uwc.ac.za/News/Pages/Decoding-Covid-19-SANBI-Scientists-Peek-Inside-First-South-African-SARS-CoV-2-Genome.aspx>

COVID-19 Vaccine Candidate Shows Promise in First Peer-Reviewed Research

<https://www.pittwire.pitt.edu/news/covid-19-vaccine-candidate-shows-promise-first-peer-reviewed-research>

SARS-CoV-2 Vaccines: Status Report

[https://www.cell.com/immunity/fulltext/S1074-7613\(20\)30120-5](https://www.cell.com/immunity/fulltext/S1074-7613(20)30120-5)

Estimates of the severity of coronavirus disease 2019: a model-based analysis

[https://www.thelancet.com/pdfs/journals/laninf/PIIS1473-3099\(20\)30243-7.pdf](https://www.thelancet.com/pdfs/journals/laninf/PIIS1473-3099(20)30243-7.pdf)

Dysfunction of Persisting β Cells Is a Key Feature of Early Type 2 Diabetes Pathogenesis

[https://www.cell.com/cell-reports/fulltext/S2211-1247\(20\)30347-8?dgcid=raven_jbs_etoc_email](https://www.cell.com/cell-reports/fulltext/S2211-1247(20)30347-8?dgcid=raven_jbs_etoc_email)

Hydroxychloroquine Update For April 6

<https://blogs.sciencemag.org/pipeline/archives/2020/04/06/hydroxychloroquine-update-for-april-6>

Canada begins clinical trial of experimental COVID-19 treatment using plasma from recovered individuals

<https://www.theglobeandmail.com/canada/article-canada-begins-clinical-trial-of-experimental-covid-19-treatment-using/>

Why measles deaths are surging — and coronavirus could make it worse

<https://www.nature.com/articles/d41586-020-01011-6>

Lipid moieties of Mycoplasma pneumoniae lipoproteins are the causative factor of vaccine-enhanced disease

<https://www.nature.com/articles/s41541-020-0181-x>

A new mechanism triggering cell death and inflammation: a left turn that kills

Writing in 'Nature', researchers from Cologne, Texas and London describe their discovery of a new mechanism that could contribute to the pathogenesis of inflammatory diseases. The scientists found that ZBP1, a protein best known for defending against incoming viruses, is activated by sensing an unusual form of cellular genetic material (Z-nucleic acids), leading to cell death and inflammation.

<https://portal.uni-koeln.de/en/universitaet/aktuell/press-releases/single-news/a-new-mechanism-triggering-cell-death-and-inflammation-a-left-turn-that-kills>

Interleukin-33 Signaling Controls the Development of Iron-Recycling Macrophages

[https://www.cell.com/immunity/fulltext/S1074-7613\(20\)30119-9](https://www.cell.com/immunity/fulltext/S1074-7613(20)30119-9)

Improving vaccine-induced immunity: Can Baseline Predict Outcome? (Opinion)

[https://www.cell.com/trends/immunology/fulltext/S1471-4906\(20\)30066-1](https://www.cell.com/trends/immunology/fulltext/S1471-4906(20)30066-1)

Soluble pattern recognition molecules: Guardians and regulators of homeostasis at airway mucosal surfaces

<https://onlinelibrary.wiley.com/doi/abs/10.1002/eji.201847811>

Influence of sickle cell disease on susceptibility to HIV infection

<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0218880>

Safety considerations with chloroquine, hydroxychloroquine and azithromycin in the management of SARS-CoV-2 infection

<https://www.cmaj.ca/content/early/2020/04/08/cmaj.200528>

Safety, tolerability, pharmacokinetics, and antimalarial efficacy of a novel Plasmodium falciparum ATP4 inhibitor SJ733: a first-in-human and induced blood-stage malaria phase 1a/b trial

[https://www.thelancet.com/pdfs/journals/laninf/PIIS1473-3099\(19\)30611-5.pdf](https://www.thelancet.com/pdfs/journals/laninf/PIIS1473-3099(19)30611-5.pdf)

Is Autoimmunity on the Rise?

A study published in Arthritis & Rheumatology provides evidence that the prevalence of autoimmunity - when the immune system goes awry and attacks the body itself - has increased in the United States in recent years.

<https://newsroom.wiley.com/press-release/arthritis-rheumatology/autoimmunity-rise>

Coronavirus membrane fusion mechanism offers as a potential target for antiviral development

<https://www.sciencedirect.com/science/article/pii/S0166354220302060?via%3Dihub>

Learning from the Past: Possible Urgent Prevention and Treatment Options for Severe Acute Respiratory Infections Caused by 2019-nCoV

<https://chemistry-europe.onlinelibrary.wiley.com/doi/full/10.1002/cbic.202000047>

The COVID-19 vaccine development landscape

<https://www.nature.com/articles/d41573-020-00073-5>

HIVconsv vaccines and romidepsin in early-treated HIV-1- infected individuals: Safety, immunogenicity and effect on the viral reservoir (study BCN02)

<https://www.frontiersin.org/articles/10.3389/fimmu.2020.00823/abstract>

If a coronavirus vaccine arrives, can the world make enough?

<https://www.nature.com/articles/d41586-020-01063-8>

COVID-19: immunopathology and its implications for therapy

https://www.nature.com/articles/s41577-020-0308-3?error=cookies_not_supported&code=e2a51f66-c6b8-461d-a850-d0d62862a3a6

Pandemic brings mass vaccinations to a halt

<https://science.sciencemag.org/content/368/6487/116>

All Hands on Deck as Scientists Revive SARS Protease Inhibitor to Attempt to Fight COVID-19

<https://www.breakthroughs.com/health-tomorrow/all-hands-deck-scientists-revive-sars-protease-inhibitor-attempt-fight-covid-19>

Novel Coronavirus Infection in Newborn Babies Under 28 Days in China

<https://erj.ersjournals.com/content/early/2020/04/01/13993003.00697-2020>

Structure of Mpro from COVID-19 virus and discovery of its inhibitors

<https://www.nature.com/articles/s41586-020-2223-y>

It's still hard to predict who will die from Covid-19

The complicated ways in which the coronavirus interacts with human immune systems.

<https://www.bloomberg.com/opinion/articles/2020-04-06/it-s-still-hard-to-predict-who-will-die-from-covid-19>

Structure of the RNA-dependent RNA polymerase from COVID-19 virus

<https://science.sciencemag.org/content/early/2020/04/09/science.abb7498>

Glycosylation profile of SARS-CoV-2 spike protein

<https://my.glycanage.com/article/Glycosylation-profile-of-SARS-CoV-2-spike-protein>

Sex drives Tregs into fat

<https://immunology.sciencemag.org/content/5/46/eabb8620>

Gut-resident CX3CR1hi macrophages induce tertiary lymphoid structures and IgA response in situ

<https://immunology.sciencemag.org/content/5/46/eaax0062>

Now metal surfaces can be instant bacteria killers, thanks to new laser treatment technique

<https://www.purdue.edu/newsroom/releases/2020/Q2/now-metal-surfaces-can-be-instant-bacteria-killers,-thanks-to-new-laser-treatment-technique.html>

Visualizing what COVID-19 does to your body

<https://www.visualcapitalist.com/visualizing-what-covid-19-does-to-your-body/>

How do the tests for coronavirus work?

<https://www.compoundchem.com/2020/03/19/covid-19-testing/>

BCG Against Coronavirus: Less Hype And More Evidence, Please

<https://www.forbes.com/sites/madhukarpai/2020/04/12/bcg-against-coronavirus-less-hype-and-more-evidence-please/#3d392b3d6b4f>

COVID-19: a new virus, but an old cytokine release syndrome

https://marlin-prod.literatumonline.com/pb-assets/products/coronavirus/immuni4349_S5.pdf

Respiratory virus shedding in exhaled breath and efficacy of face masks

https://www.nature.com/articles/s41591-020-0843-2?error=cookies_not_supported&code=3d4a77df-2426-40ce-b057-7725f4c7c1f0

Mice, hamsters, ferrets, monkeys. Which lab animals can help defeat the new coronavirus?

<https://www.sciencemag.org/news/2020/04/mice-hamsters-ferrets-monkeys-which-lab-animals-can-help-defeat-new-coronavirus>

'Suppress and lift': Hong Kong and Singapore say they have a coronavirus strategy that works

<https://www.sciencemag.org/news/2020/04/suppress-and-lift-hong-kong-and-singapore-say-they-have-coronavirus-strategy-works>

Would-be coronavirus drugs are cheap to make

<https://www.sciencemag.org/news/2020/04/would-be-coronavirus-drugs-are-cheap-make>

Polio, measles, other diseases set to surge as COVID-19 forces suspension of vaccination campaigns

<https://www.sciencemag.org/news/2020/04/polio-measles-other-diseases-set-surge-covid-19-forces-suspension-vaccination-campaigns>

Glycogen metabolism regulates macrophage-mediated acute inflammatory responses

<https://www.nature.com/articles/s41467-020-15636-8>

Systemic and pulmonary C1q as biomarker of progressive disease in experimental non-human primate tuberculosis

<https://www.nature.com/articles/s41598-020-63041-4>

Reduction and Functional Exhaustion of T Cells in Patients with Coronavirus Disease 2019 (COVID-19)

<https://www.frontiersin.org/articles/10.3389/fimmu.2020.00827/abstract>

Remdesivir is a direct-acting antiviral that inhibits RNA-dependent RNA polymerase from severe acute respiratory syndrome coronavirus 2 with high potency

<https://www.jbc.org/content/early/2020/04/13/jbc.RA120.013679>

Deadliest malaria strain protects itself from the immune system

https://www.crick.ac.uk/news/2020-04-13_deadliest-malaria-strain-protects-itself-from-the-immune-system

Super-charging drug development for COVID-19

Cell-free production method scales up yield by 5,000 times.

<https://news.northwestern.edu/stories/2020/04/super-charging-drug-development-for-covid-19/>

Association of chemosensory dysfunction and Covid-19 in patients presenting with influenza-like symptoms

<https://onlinelibrary.wiley.com/doi/abs/10.1002/alr.22579>

JOBS and Positions:

JUNIOR RESEARCH FELLOW (Full-time, 3 Year contract) Centre for Lung Infection and Immunity Division of Pulmonology, Department of Medicine Faculty of Health Sciences

Deadline for applications: **20 April 2020**

http://www.staff.uct.ac.za/sites/default/files/FHS_E200173_JRF_Lung%20Infect%20Pulmonology.pdf

Please don't forget to send me any info you may have on funding opportunities, meetings, workshops and/or conferences, so I can post it on the SAIS LinkedIn page. Additionally, if you are recruiting/hiring, I am more than happy to advertise it on LinkedIn and in the newsletter.

Thank you.

Kind regards

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