

# THE SEVENTH ESWI INFLUENZA CONFERENCE

#ESWI2020 VIRTUAL EDITION 6-9 DECEMBER 2020

European Scientific Working group on Influenza



# The Organising Committee of the Seventh ESWI Influenza Conference was very excited to launch the Virtual edition of #ESWI2020.

We felt it is has never been more important to connect and come together with influenza, RSV disease, COVID-19 experts and policy makers. COVID-19 has clearly shown that a previously unknown pathogen may strike at any time, in any place and without any warning. There is a clear need for countries to have the capacity to maintain effective alert and response systems to detect and quickly react to outbreaks and to share information about such outbreaks rapidly and transparently. ESWI has been putting influenza pandemic preparedness on the agenda of society for 3 decades now. Influenza and COVID-19 clearly have overlapping pandemic preparedness strategies. Policy makers and scientists responsible for managing this raging COVID-19 pandemic have turned to historical experience with influenza pandemics and for good reason. Intervention strategies perspectives need to be addressed urgently and the clinical perspectives and pathogenesis perspectives of influenza virus, RSV and SARS-CoV-2 need to be discussed between peers and stakeholders.

We had hoped to reschedule the Seventh ESWI Influenza Conference "live version" later at the beginning of December, but in September already it became clear that large gatherings would still be prohibited and existing travel bans would still be in place, and additionally we wanted to prioritize the health and safety of our faculty and attendees. We had therefore decided to go 'virtual', and to make the 7th ESWI Influenza Conference a virtual Conference.

# SCS SPI KEY SAT



# This was our programme:

# Sunday 6 december

# Sunday 6 December, 08:00 - 10:00 CET Webinar: Influenza and RSV in a COVID-19 world

Sunday 6 December, 08:00 - 10:00 CET

### CHAIR-Ab Osterhaus TiHo Hannover

1. Influenza, RSV and COVID-19: similarities and differences

- Arnold Monto, University of Michigan, USA
- 2. Epidemiology: what if COVID-19 strikes in the flu season? Colin Russell, University of Amsterdam , NL
- 3. Challenges in serology for COVID-19
- Linfa Wang, Duke-NUS Medical School , SG
- 4. Diagnoses for influenza, RSV and COVID-19 and consequences
- Marco Goeijenbier, Erasmus MC , NL

## **Opening ceremony**

Sunday 6 December, 10:00 - 12:00 CET

CHAIRS:

Ab Osterhaus, TiHo, Hannover Colin Russell, Academic Medical Center, University of Amsterdam Marco Goeijenbier, Erasmus MC

PROGRAMME

- 1. ECDC Director Andrea Ammon's message to participants of the ESWI Influenza Conference Andrea Ammon, European Centre for Disease Prevention and Control, Swede
- 2. Opening keynote lecture: The latest on the covid-19 global situation & how the pandemic spread Sylvie Briand, World Health Organisation, Switzerland
- 3. Opening keynote lecture: Hemagglutinin-stalk based universal influenza virus vaccines Florian Krammer, Icahn School of Medicine at Mount Sinia, United States of America

Sunday 6 December, 12:00 - 12:30 CET

Scientific Programme, Keynote lectures

SPEAKER:

Zhengli Shi, Wuhan Institute of Virology

# How to join forces in influenza pandemic preparedness - what can we learn from COVID-19?

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SCS KEY

Sunday 6 December, 12:00 - 14:00 CET

Science Policy Interface

TRACK

CHAIR

Sylvie van der Werf, Institut Pasteur

### PROGRAMM

- 1. The vaccine R&D ecosystem after COVID-19: paradigm shifts or business as usual in tackling future influenza pandemic threats? Marissa D Malchione, Sabin Vaccine Institute, Washington, DC, USA
- 2. The Alliance for Influenza Preparedness: strategic priorities to enhance our global response to the next pandemic. Joseph Bresee, US CDC, United States of America
- 3. The threat of a new influenza pandemic: its certainty, its unpredictability (or not?), its potential magnitude and speed. Gülsah Gabriel, Heinrich-Pette-Institute, Leibniz Institute for Experimental Virology, Hamburg, Ger
- 4. Challenges in the supply of influenza Vaccines during the COVID-19 Pandemic and lessons learned Beverly Taylor, International Federation of Pharmaceutical Manufacturers and Associations, United Kingdom

Sunday 6 December, 14:00 - 14:30 CET

TRACKS Scientific Programme, Keynote lectures

SPEAKER:

Barbara Rath, Vienna Vaccine Safety Initiative

scs Sunday 6 December, 14:00 - 16:00 CET TRACK Scientific Programme CHAIRS Ron Fouchier, Erasmus MC Rotterdam Maria Auladell, University of Melbourne PROGRAMME 1. Influenza viruses with reduced baloxavir susceptibility demonstrate lower fitness in ferrets Leo Yi Yang Lee, WHO Collaborating Centre for Reference and Research on Influenza, at the Peter Doherty Institute for Infection and Immunity, Melbourne, Australia

- 2. The relationship between viral shedding in nose, throat and exhaled breath and symptom severity of respiratory viruses Nancy H. L. Leung, WHO Collaborating Centre for Infectious Disease Epidemiology and Control, School of Public Health, Li Ka Shing Faculty of Medicine, The University of Hong Kong
- 3. N-glycolylneuraminic acid-binding of H7 Influenza A viruses
- Cindy M. Spruit, Department of Chemical Biology & Drug Discovery, Utrecht Institute for Pharmaceutical Sciences, Utrecht University, 3584 CG Utrecht, The Netherlands
- 4. Novel model to determine how influenza viral shedding correlates with infectiousness and to predict the impact of antivirals on reduction of influenza transmission Jason Asher, Leidos, Reston, Virginia, USA

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SCS KEY

### Epidemiology, surveillance and modeling of influenza, RSV disease and COVID-19, including virus evolution and strain selection SCS Sunday 6 December, 14:00 - 16:00 CET TRACK Scientific Programme CHAIRS: Colin Russell, Academic Medical Center, University of Amsterdam Bingyi Yang, The University of Hong Kong PROGRAMME 1. Mapping the global antigenic diversity of avian H7 influenza A viruses Adinda Kok, Department of Viroscience, Postgraduate School Molecular Medicine, Erasmus MC, Rotterdam, The Netherlands 2. National influenza surveillance systems in five European countries: a comparative framework based on WHO guidance Thierry Rigoine de Fougerolles, Corporate Value Associates, France 3. Evolution of receptor specificity of contemporary A/H3N2 explains inability to agglutinate erythrocytes Frederik Broszeit, Utrecht University, The Netherlands 4. Difference in the age and gender distribution of Covid-19 cases following movement restriction measures in Asia Damien Alain Michel Philippon, WHO Collaborating Center for Infectious Disease Epidemiology and Control, School of Public Health, Li Ka Shing Faculty of Medicine, The University of Hong Kong, Hong Kong Special Administrative Region, China 5. Evaluating virus interference in a trial of influenza vaccination in children

Tim K. Tsang, WHO Collaborating Centre for Infectious Disease Epidemiology and Control, School of Public Health, Li Ka Shing Faculty of Medicine, The University of Hong Kong, Hong Kong Special Administrative Region, China.

# Sunday 6 December, 15:00 - 16:00 CET Poster Peek with Marco Goeijenbier

TIME:		
Sunday 6 December, 15:00 - 16:00 CET		

Marco Goeiienbier discusses trending posters.

### Sunday 6 December, 16:00 - 18:00 CET Satellite symposium organised by Seqirus: Strengthening influenza protection: Different needs, different solutions SAT LIVE & Sunday 6 December, 16:00 - 18:00 CET TRACK: Satellite sessions CHAIR-Joan Puig-Barberà, Foundation for the Promotion of Health and Biomedical Research of the Valencian Community (FISABIO) PROGRAMME 1. Protecting a diverse population Joan Puig-Barberà, Foundation for the Promotion of Health and Biomedical Research of the Valencian Community (FISABIO), Spain 2. Safeguarding the older generation Caterina Rizzo, Bambino Gesù Pediatric Hospital, Italy 3. Shielding special populations Catherine Moore, Public Health Wales, United Kingdom 4. Preparing for an influenza pandemic - and what we can learn from SARS-CoV-2 Florian Krammer, Icahn School of Medicine at Mount Sinia, United States of America 5. Panel and audience discussion Joan Puig-Barberà, Foundation for the Promotion of Health and Biomedical Research of the Valencian Community (FISABIO), Spain 6. Closing remarks Joan Puig-Barberà, Foundation for the Promotion of Health and Biomedical Research of the Valencian Community (FISABIO), Spain

# Special keynote lecture Janssen: Janssen's efforts in the development of a COVID-19 vaccine KEY Sunday 6 December, 18:00 - 20:00 CET Keynote lectures

Hanneke Schuitemaker Janssen

TRACK

SPEAKER-

Sunday 6 December, 18:00 - 20:00 CET Virus structure and replication in influenza virus, RSV and SARS-CoV-2; latest developments in influenza virus, SARS-CoV-2 and RSV molecular virology

Sunday 6 December, 18:00 - 20:00 CET

TRACK Scientific Programme

CHAIRS: Ervin Fodor, University of Oxford

Aitor Nogales, National Institute for Agricultural and Food Research and Technology (INIA)

### PROGRAMME

TRACK

CHAIR:

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1. Upstream translation initiation expands the coding capacity of influenza viruses Lea Meyer, MRC-University of Glasgow Centre for Virus Research, Glasgow G61 1QH, UK

- 2. Optimized reverse genetics systems for clinical isolates of respiratory syncytial virus enables rapid evaluation of naturally occurring antibody escape mutants Alina Schadenhofer, Research Center for Emerging Infections and Zoonoses, University of Veterinary Medicine Han
- 3. Homologous PB2-HA packaging signals direct influenza A virus reassortment Courtney L. Steger, Department of Microbiology and Immunology, Emory University School of Medicine, Atlanta, GA, USA
- 4. Alternative splicing liberates a cryptic cytoplasmic isoform of mitochondrial MECR that antagonizes influenza virus Steven F. Baker, Department of Medical Microbiology and Immunology, University of Wisconsin-Madison, United States of America
- 5. Host ANP32A mediates the assembly of the influenza virus replicase Haitian Fan, Sir William Dunn School of Pathology, University of Oxford, South Parks Road, Oxford OX1 3RE, United Kingdom

### Benefits of vaccination of healthcare workers

# Sunday 6 December, 18:00 - 20:00 CET Science Policy Interface Hanna Nohynek, Finnish Institute for Health and Welfare PROGRAMM 1. Annual seasonal influenza vaccination of health care workers Rebecca Cox, University of Bergen, Norway

- 2. Mandatory vaccination for healthcare workers in the US Litjen Tan, National Adult Immunization Summit and National Influenza Vaccine Summit, United States of America
- 3. Current recommendations and guidelines for healthcare workers vaccination: an overview Ted van Essen, General Practice, The Netherlands
- 4. The ethics of influenza vaccination of healthcare workers: a critical appraisal Sarah Edwards, University College London, United Kingdom

### SPI

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sunays becember, 2000-2200 Ccl Satellite symposium organised by AstraZeneca: Targeting SARS-CoV-2: Novel vaccines and antivirals for the prevention and treatment of COVID-		
		SAT
	TIME: Sunday 6 December, 20:00 - 22:00 CET TRACK: Satellite sessions	LIVE
	Veeva ID: Z4-27960	
	PROGRAMME:  1. Chair's introduction Jorge Flores, PATH, United States of America	
	2. New advances in COVID-19 vaccine development	

# Sarah Gilbert, University of Oxford, United Kingdom 3. Exploring new therapies for COVID-19:Focus on monoclonal antibodies Mark Esser, AstraZeneca, United States of America

### 4. Q&A panel

Jorge Flores, PATH, United States of America

### Sunday 6 December, 22:00 - 22:30 CET Recap of the day: Highlights with Colin Russell and Brooke Nichols

Sunday 6 December, 22:00 - 22:30 CET

# Monday 7 december

### Monday 7 December, 08:00 - 08:30 CET Morning welcome lecture: Antiviral and Immune Modifiers for Treatment of Influenza, RSV and COVID-19

Monday 7 December, 08:00 - 08:30 CET

TRACK: Keynote lectures

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SPEAKER: Michael Ison, Northwestern University

Monday 7 December, 08:00 - 10:00 CET Webinar: Clinical manifestations of Influenza, RSV and COVID-19

Monday 7 December, 08:00 - 10:00 CET

CHAIR: Ab Osterhaus, TiHo, Hannover

1. Clinical signs and symptoms: overlap and differences

Barbara Rath, Vienna Vaccine Safety Initiative, DE 2. Risk groups: overlap and difference

- Daniel Feikin, World Health Organisation, CH
- 3. Clinical guidelines and symptomatic treatment

Peter Openshaw, Imperial College London, UK 4. Co-Infections: Possible scenario's

Bruno Lina, Université de Lyon , FR

### Monday 7 December, 09:00 - 09:15 CET Good morning with Colin Russell

Monday 7 December, 09:00 - 09:15 CET

supported by Roche

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IE:	łay 7 December, 10:00 - 12:00 CET	LIV
tel	ite sessions	
ogr	s Goeijenbier, Erasmus MC esc Xavier Cos, Primary Care Diabetes Europe/ Institut Català de la salut AMME The impact of influenza on people with diabetes	
	Marco Goeijenbier, Erasmus MC, The Netherlands Influenza vaccination and people with diabetes: a must !	
3.	Frances: Xavier Cos, Primary Care Diabetes Europe/Institut Català de la salut, Spain Recent findings in glycemic variability and influenza severity Kirsty Short, University of Queenland, Australia Kirsty Short, University of Queenland, Australia	
4.	How to increase vaccination coverage in people with diabetes, the UK case Dan Howarth, Diabetes UK, United Kingdom	
5.	Diabetes during the COVID-19 pandemic Ab Osterhaus, THO, Hannover, Germany	

Monday 7 December, 12:00 - 12:30 CET Special keynote lecture Janssen: Immunology underpinning vaccine strategy in COVID-19	
	KEY
TIME: Monday 7 December, 12:00 - 12:30 CET TRACK: Keynote lectures	
SPEARER Peter Openshaw, Imperial College London	

Keynote lecture: SARS-CoV2 : the hamster infection model, developing antiviral strategies and a unique single dose vaccine based on the yellow fev vaccine					
	KEY				

Monday 7 December, 12:00 - 12:30 CET

TRACK: Keynote lectures

SPEAKER: Johan Neyts, University of Leuven

# Monday 7 December, 12:00 - 13:00 CET Poster Peek with Brooke Nichols

TIME: Monday 7 December, 12:00 - 13:00 CET Colin Russell discusses trending posters.

	Monday 7 December, 12:00 - 14:00 CET All you need to know about influenza, RSV disease and COVID-19				
		SPI			
TRACI Scie	vday 7 December; 12:00 - 14:00 CET ≈ Ince Policy Interface				
	GRAMME: 1. Impact of Influenza Vaccination on Antibiotic Use and Antimicrobial Resistance: a Mixed Methods Study to Develop a Strategic Plan Lotte van Heuvel, Nivel, Netherlands Institute for Health Services Research, The Netherlands				
2	2. All you need to know about influenza, both epidemic and pandemic Ab Osterhaus, TiHo, Hannover, Germany				
3	3. All you need to know about RSV disease Terho Heikkinen, University of Turku, Finland				
4	COVID-19 Vaccine Development and Approvals in the US: Operation Warp Speed     Arnold Monto, University of Michigan, United States of America				

5. How viruses travel tricky routes

Colin Russell, Academic Medical Center, University of Amsterdam, The Netherlands

Monday 7 December, 14:00 - 16:00 CET Satellite symposium organised by Janssen: Addressing the ever-changing burden of RSV: The past, present and post COVID-19

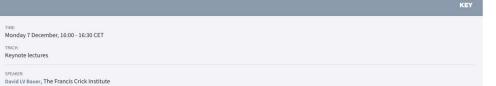
	SAT
TIME: Monday 7 December, 14:00 - 16:00 CET	LIVE
TRACK: Satellite sessions	
CHAIR:	
Peter Openshaw, Imperial College London	
PROGRAMME:	
1. Welcome and Introduction	
Peter Openshaw, Imperial College London, United Kingdom	
2. New insights into the full burden of RSV infection in children Terho Heikkinen, University of Turku, Finland	
3. Overcoming the identity crisis of RSV in adults: An under-recognised burden in at-risk populations Edward Walsh, Rochester General Hospital, United Kingdom	
<ol> <li>Planning for a post-Covid-19 world: Can we expect large RSV outbreaks in 2021/2022? Peter Openshaw, Imperial College London, United Kingdom</li> </ol>	
5. Panel Discussion	
Peter Openshaw, Imperial College London, United Kingdom	
6. Meeting close	
Peter Openshaw, Imperial College London, United Kingdom	

TIME:

TRACK:

SPEAKER:

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	ay 7 December, 16:00–18:00 CET and host factors in the pathogenesis of influenza, RSV disease and COVID-19, including genomics and big data
TIME:	
Mond	Jay 7 December, 16:00 - 18:00 CET
TRACK:	
Scien	titic Programme
CHAIRS	ì
	y Graham, Vaccine Research Center, NIAID, NIH
Kirsty	r Short, University of Queensland
PROGR 1.	MMME Cellular importin-α3 expression dynamics in the lung regulate antiviral response pathways against influenza A virus infection Sebastian Beck, Viral Zoonosis – One Health, Heinrich Pette Institute, Leibniz Institute for Experimental Virology, Hamburg, Germany
2.	Adaptation of an HPAI H5N1 virus to the ferret central nervous system? Jurre Y. Siegers, Dept. of Viroscience, Erasmus MC, Rotterdam, the Netherlands
3.	Comparative genomics and transcriptomics help unravel why Australian Black Swans are uniquely susceptible to highly pathogenic avian influenza (HPAI) Anjana Karawita, School of Chemistry and Molecular Biosciences, The University of Queensland, Australia, Australia Centre for Disease Preparedness Services, CSIRO, Geelong, Australia
4.	Species-specific endotheliotropism of Highly Pathogenic Avian Influenza Virus in avian hosts Anja C.M. de Bruin, Department of Viroscience, Erasmus Postgraduate School Molecular Medicine, Erasmus MC, Rotterdam, The Netherlands
5.	Female-biased vaccine-induced immunity and protection against influenza A viruses is maintained against drifted and viruses in mice

Rebecca Ursin, Johns Hopkins University Bloomberg School of Public Health, Department of Biochemistry and Molecular Biology, Baltimore, MD, USA

# Monday 7 December, 15:00 - 18:00 CET Reservoirs for future pandemics: threats from the animal world Scs Monday 7 December, 15:00 - 18:00 CET INACK: Scientific Programme CMMRS: Ab oterhaus, TiHo, Hannover Guha Asthagiri Arunkumar, Icahn School of Medicine at Mount Sinai PROGRAMME: 1. Co-infections with Iow and high pathogenic avian influenza HSN8 virus demonstrate that HPAIV are more likely to emerge in chickens than in ducks Pipters Bessiere, Université de Toulouse, INRAC-ENVT, France 2. Antigenic characterization of novel H1 influenza A viruses in swine Rodrigo Tapla, Departamento de Medicina Preventos animal, Faculta de Ciencias Veterinarias y Pecuarias, Universidad de Chile, Santiago, Chile. 3. Characterization of novel H1 influenza A Niruses in swine Rodrigo Tapla, Departamento de Medicina Preventos Animal, Faculta de Ciencias Veterinarias y Pecuarias, Universidad de Chile, Santiago, Chile. 3. Characterization of Nucrobiology, Icahn School of Medicine at Mount Sinai, New York, NY, USA; Graduate School of Biomedical Sciences, Icahn School of Medicine at Mount Sinai, New York, NY, USA; Graduate School of Biomedical Sciences, Icahn School of Medicine at Mount Sinai, New York, NY, USA; Graduate School of Biomedical Sciences, Icahn School of Medicine at Mount Sinai, New York, NY, USA; Graduate School of Biomedical Sciences, Icahn School of Medicine at Mount Sinai, New York, NY, USA; Graduate School of Biomedical Sciences, Icahn School of Medicine a

4. Influenza D virus: a potential threat for humans? Claudia Trombetta, University of Siena, Italy

# SPI Monday 7 December, 16:00 - 18:00 CET TRACK: Science Policy Interface CHAIR: Menno de Jong, University of Amsterdam PROGRAMME 1. Suppressing COVID-19 transmission in three epidemic waves in Hong Kong Peng, Wu, WHO Collaborating Centre for Infectious Disease Epidemiology and Control, School of Public Health, Li Ka Shing Faculty of Medicine, The University of Hong Kong, Hong Kong, S.A.R. (China) 2. Pre-pandemic and pandemic vaccines Florian Krammer, Icahn School of Medicine at Mount Sinia, United States of America 3. Antivirals influenza, RSV, COVID-19: key recent developments Frederick Hayden, Professor Emeritus of Medicine, United States of America 4. Non medical interventions Angeliki Melidou, European Centre for Disease Prevention and Control, Sweden 5. Regulatory requirements of (pre)pandemic vaccines Marco Cavaleri, European Medicines Agency, The Netherlands Monday 7 December, 18:00 - 18:30 CET Special keynote lecture Cidara Therapeutics: Beyond Vaccines and mAbs: Progress Towards Universal Influenza Protection with Cloudbreak® Influenza Antiviral Conjugates (AVCs) Monday 7 December, 18:00 - 18:30 CET TRACK Keynote lectures PROGRAMME

Influenza, RSV disease and COVID-19 intervention strategies: current practice and future strategies

1. Opening remarks

Michael Grundel Ison, Northwestern University, United States of America

2. Beyond Vaccines and mAbs: Progress Towards Universal Influenza Protection with Cloudbreak\* Influenza Antiviral Conjugates (AVCs) Leslie Tari, Cidara Therapeutics, United States of America

### Monday 7 December, 18:00 - 18:30 CET Meet Colin Russell and Marco Goeijenbier in the lounge

Monday 7 December, 18:00 - 18:30 CET

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Monday 7 December, 18:00 - 20:00 CET Innate and adaptive immune responses in influenza, RSV disease and COVID-19 SCS	Tuesday 8 december
TIME: Monday 7 December, 18:00 - 20:00 CET TRACK	
Scientific Programme	
CHARS: Giuseppe Sautto, University of Georgia Guus Rimmelzwaan, University of Veterinary Medicine Hannover, Foundation	Tuesday 8 December, 08:00 - 08:30 CET Morning welcome lecture: Host cell factors that impact the emergence of pandemic respiratory viruses
ROGRAMME: <ol> <li>In-concert immune dynamics during natural influenza virus infection and recovery in acute hospitalized patients</li> <li>Thi H. O. Nguyen, Department of Microbiology and Immunology, University of Melbourne, at the Peter Doherty Institute for Infection and Immunity, Parkville 3010, Victoria, Australia</li> </ol>	KEY
Integrated immune dynamics define correlates of COVID-19 severity and antibody responses     LC Rowntree, Department of Microbiology and immunology, University of Melbourne, at the Peter Doherty institute for Infection and Immunity, Melbourne, Australia; Co-first	TIME: Tuesday 8 December, 08:00 - 08:30 CET TRACE
<ol> <li>Suboptimal SARS-CoV-2-specific CD8+ T-cell response associated with the prominent HLA-A*02:01 phenotype Jennifer R Habel, Department of Microbiology and Immunology, University of Melbourne, at the Peter Doherty Institute for Infection and Immunity, Melbourne, Victoria 3000, Australia</li> </ol>	Keynote lectures
4. Molecular and functional dissection of the influenza virus-specific CD8+T cell receptor repertoire during aging CE van de Sandt, Dept. Microbiology and Immunology. The University of Melbourne at The Peter Dohery Institute, Melbourne, Australia; Dept. Hermatopoiesis, Sanquin Blood Supply Foundation, Amsterdam, The Netherlandskanguni Blood Supply Foundation, Amsterdam, The Netherlands	SPEARER: Wendy Barclay, Imperial College London
5. A history of obesity increases the severity of influenza virus infection and the pro-inflammatory response of pulmonary leukocytes Ellesandra C. Noye, School of Chemistry and Molecular Biosciences, The University of Queensland, St Lucia Queensland 4072, Australia	supported by Roche
Influenza, RSV disease and COVID-19 from a global health perspective, including underserved communities SPI TIME Monday 7 December, 18:00 - 20:00 CET	Tuesday & December, 08:00 - 10:00 CET Webmar: Intervention strategies for COVID-19, influenza and RSV Time: Tuesday & December, 08:00 - 10:00 CET
TRACK: Science Policy Interface	CHAIR: Ab Osterhaus, TiHo, Hannover
CHAIR: Marta Nunes, University of the Witwatersrand	1. Current strategies Ab Osterhaus, RIZ, Hannover , Germany 2. Testing and testing consequences
ROGRAMME: 1. PEDSIDEA_Community: Real-time Mapping of Influenza/RSV/COVID Incidence & Severity in Underserved Communities in the United States Barbara Rath, Vienna Vaccine Safety Initiative, Germany	Chantal Reusken, RIVM, The Netherlands 3. Influenza vaccination during COVID-19 Florian Krammer, Icahn School of Medicine , USA 4. Antivirais & Biological Response Modifiers
2. What is the impact of COVID-19 in underserved communities? Olivia Trulloch, Anthrologica, United Kingdom	Mike Ison, Northwestern University, USA
Only a roution, neurologica, one on agoin 3. Unique features of the epidemiology of influenza and COVID-19 in low and middle-income countries – implications for policy Cheryl Cohen, University of the Witwatersznad, South Africa	
4. Global access to vaccines for LMIC- challenges and opportunities Niteen Wairagkar, Vaccines for All, United States of America	Tuesday 8 December, 09:00 - 09:15 CET Good morning with Brooke Nichols
	TIME: LIVE Q Tuesday 8 December, 09:00 - 09:15 CET
Monday 7 December, 20:00 - 20:30 CET	

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TIME-

Monday 7 December, 20:00 - 20:30 CET

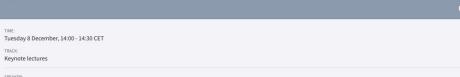
day 8 December, 09:00-09:30 CET t the expert (sponsored by Roche): Strategies to Reduce Influenza Transmission – limited availability, registration r	equired KEY
sday 8 December, 09:00 - 09:30 CET « note lectures	
KERS: reas Widmer, University of Basel Yi Yang Lee, Peter Doherty Institute for Infection and Immunity	
	supported by Roche
day 8 December, 10.00 - 10.30 CET note lecture: COVID-19 vaccine development: where are we?	KEY
sday 8 December, 10:00 - 10:30 CET % note lectures	
KFR	
exe: nnie Saville, CEPI	
nie Saville, CEPI day 8 December, 10:00 - 12:00 CET uenza, RSV disease and COVID-19: clinical impact and diagnostic approaches (including disease management in prin ings)	nary healthcare and hospital
nie Saville, CEPI day 8 December, 10:00 - 12:00 CET uenza, RSV disease and COVID-19: clinical impact and diagnostic approaches (including disease management in prin ings) sday 8 December, 10:00 - 12:00 CET	
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Inite Saville, CEPI  day 8 December, 10:00 - 12:00 CET uenza, RSV disease and COVID-19: clinical impact and diagnostic approaches (including disease management in prin ings)  sday 8 December, 10:00 - 12:00 CET % % % % % % % % % % % % % % % % % % %	SCS Randomised, Controlled Study
Inite Saville, CEPI  day 8 December, 10:00 - 12:00 CET uenza, RSV disease and COVID-19: clinical impact and diagnostic approaches (including disease management in prin ings)  sday 8 December, 10:00 - 12:00 CET % % % % % % % % % % % % % % % % % % %	Randomised, Controlled Study y Hospital Southampton NHS Foundation controlled trial (FluPOC) spital Southampton NHS Foundation Trust,
Inite Saville, CEPI  day 8 December, 10:00 - 12:00 CET  uenza, RSV disease and COVID-19: clinical impact and diagnostic approaches (including disease management in prin ings)  sday 8 December, 10:00 - 12:00 CET  %  sday 8 December, 10:00 - 12:00 CET  %  concentration of the second	Randomised, Controlled Study Hospital Southampton NHS Foundation controlled trial (FluPOC) spatial Southampton NHS Foundation Trust, schip Programme, UK
Inite Saville, CEPI  day 8 December, 10:00 - 12:00 CET uenza, RSV disease and COVID-19: clinical impact and diagnostic approaches (including disease management in prir ings)  sday 8 December, 10:00 - 12:00 CET % intific Programme  ss. co Goejipibler, Erasmus MC an Clark, University of Southampton  KMME: Clinical Impact of Molecular Point-of-Care Testing for COVID-19 in Adults Presenting to Hospital: A Prospective, Interventional, Non- (CoV-19POC) Nathan J Brendish, School of Clinical and Experimental Sciences, Faculty of Medicine, University of Southampton, UK; Department of Infection, University Inst. Southampton, UK Impact of a routine molecular point-of-care 'test and treat' strategy for influenza in hospitalised adults: a multi-centre, randomised Tritat, Woltark, School of Clinical and Experimental Sciences, Faculty of Medicine, University of Southampton, UK; Department of Infection, University Southampton, UK Gobal Study of Adults Hospitalized with Influenza, Respiratory Syncyttal Virus (RSV) and Human Metapneumonvirus (IMPV); Risk F	Randomised, Controlled Study Hospital Southampton NHS Foundation controlled trial (FluPOC) applal Southampton NHS Foundation Trust, whip Programm, UK iactors, Clinical Characteristics and review and meta-analysis

LIVE

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TRACK		LIVE 🖗
Sate	lite sessions	
PROGR	NAME:	
1.	Welcome Address David Heymann, LSHTM, United Kingdom	
2.	Accelerated Development: How COVID-19 Vaccines are Being Developed Safely in Record Time Pieter Neels, Vaccine Advice BV, Belgium	
3.	Platforms to Launch: The Cutting-Edge Technologies Underpinning COVID-19 Vaccines in Development Drew Weissman, University of Pennsylvania, United States of America	
4.	Latest Data and Insights: COVID-19 Vaccine Candidates Robert Frenck, Cincinnati Childrens Hospital, United States of America	
5.	Panel Q&A David Heymann, LSHTM, United Kingdom	
6.	Multidisciplinary Discussion What Happens Next? Approaching Vaccination in a Post-Pandemic World David Heymann, LSHTM, United Kingdom	
7	Final Summary & Close	

David Heymann, LSHTM, United Kingdom

Tuesday 8 December, 14:00 - 14:30 CET Keynote lecture: Long-distance airborne dispersal of SARS-CoV-2 in COVID-19 wards



SPEAKER: Janina Krambrich, Uppsala University

TIME:

TRACK:

# Tuesday 8 December, 14:00 - 15:00 CET TME: Tuesday 8 December, 14:00 - 15:00 CET

Marco Goeijenbier discusses trending posters.

# esday 8 December, 14:00 - 16:00 CET reats and risk management of epidemics and pandemics

TIME: Tuesday 8 December, 14:00 - 16:00 CET

TRACK:

Scientific Programme

CHAIRS:

Colin Russell, Academic Medical Center, University of Amsterdam Ann Moen, World Health Organization

PROGRAMME

- Avian H5 influenza A viruses: towards antigen design of a universal H5 vaccine Mathilde Richard, Department of Viroscience, ErasmusMC, The Netherlands
- 2. A meta-analysis on the role of children in SARS-CoV-2 in household transmission clusters Yanshan Zhu, School of Chemistry and Molecular Biosciences, The University of Oueensland, Brisbane Australia
- 3. Rapid global SARS-CoV-2 external quality assurance (EQA) programme by influenza mechanism of the Global Influenza Surveillance and Response System (GISRS) Dmitriy Pereyaslov, World Health Organization, Switzerland
- 4. Social contact patterns and age dependent susceptibility shape the re-emergence potential of A/H3N2 influenza viruses Joseph Gibson, Amsterdam University Medical Center, The Netherlands

### Tuesday 8 December, 14:00 - 16:00 CET

Influenza, RSV disease and COVID-19 vaccination: current and future approaches

TIME:

Tuesday 8 December, 14:00 - 16:00 CET

TRACK:

Scientific Programme

CHAIRS:

Barney Graham, Vaccine Research Center, NIAID, NIH Miruna Elena Rosu, Erasmus Medical Center

PROGRAMME

- 1. Detailed analysis of the immune response after ChAdOx1 nCOV-19 vaccination Teresa Lambe, Jenner Institute, Nuffield Department of Medicine, University of Oxford, United Kingdom
- 2. Conserved hemagglutinin stem immunogens elicit cross-group protective broadly neutralizing antibody responses to influenza A viruses Syed Moin, Vaccine Research Center, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, MD, USA
- 3. Potent protective immunity to influenza by HA nanoparticle vaccines
- Seyhan Boyoglu-Barnum, NIH, United States of America
- Structure-based design of stabilized recombinant influenza neuraminidase tetramers
  Julia Lederhofer, Vaccine Research Center, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, MD 20892, United States
- 5. AS03-adjuvanted recombinant SARS-CoV-2 S antigen vaccine candidate: from non-clinical to clinical development

Valerie Lecouturier, Sanofi Pasteur, Marcy l'etoile, France

	Jay 8 December, 14:00-16:00 CET viral and immune therapy for influenza, RSV disease and COVID-19 SCS
TIME:	
Tues	day 8 December, 14:00 - 16:00 CET
TRACH	
Scier	ntific Programme
CHAIR	S.
Frede	erick Hayden, Professor Emeritus of Medicine
Joan	ne Mckenzie, University of Sheffield
PROG	AAME:
1.	Combining baloxavir with standard-of-care (SoC) neuraminidase inhibitor (NAI) in patients hospitalised with severe influenza: results from the global randomised phase 3 FLAGSTONE study Deepall Kumar, University Health Network, Toronto, Ontario, Canada
2	Structural and functional characterization of a SARS-CoV-1 and -2 cross-neutralizing single domain antibody and their clinical potential Xavier Saelens, Ghent University and VIB, Belgium

- Treatment-Emergent Resistance to the Influenza Antiviral Baloxavir: Pooled Analysis of Baloxavir Clinical Trials
  Jinnie Ko, Genentech, Inc., South San Francisco, CA, United States of America
- Characterization of In Vitro Activity and In Vivo Efficacy of CD377, a Novel Anti-Viral Fc-Conjugate, Against 2020-2021 Northern Hemisphere Influenza Quadrivalent Vaccine Strains

Jeffrey Locke, Cidara Therapeutics, United States of America

### Tuesday 8 December, 16:00 - 18:00 CET Satellite symposium organised by Roche: Can we stop flu going viral?

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TRACK	day 8 December, 16:00 - 18:00 CET ilte sessions	LIVE 🖗
CHAIR: Frede	rick Hayden, Professor Emeritus of Medicine	
PROGR	MANE: Welcome and introduction Frederick Hayden, Professor Emeritus of Medicine, United States of America	
2.	Antiviral treatment in hospitalised patients: Setting the scene Frederick Hayden, Professor Emeritus of Medicine, United States of America	
3.	Antiviral treatment in hospitalised patients Jean-Paul Mira, Centre Hospitalier Paris Centre, France	
4.	Role of antiviral treatment in reducing the spread of influenza: Setting the scene Frederick Hayden, Professor Emeritus of Medicine, United States of America	
5.	Role of antiviral treatment in reducing the spread of influenza Lauren Meyers, The University of Texas at Austin, United States of America	
6.	Panel discussion with Jean-Paul Mira, Lauren Meyers, Menno de Jong, Deepali Kumar, Benjamin Cowling, Terho Heikkinen Frederick Hayden, Professor Emeritus of Medicine, United States of America	
7.	Summary and closing remarks Frederick Hayden, Professor Emerius of Medicine, United States of America	

	ay 8 December, 18:00-20:00 CET lite symposium organised by Sanofi Pasteur: 10 years of evidence using high dose influenza vaccine in people age 65 and older	SAT
TIME: Tuesc TRACK:	day 8 December, 18:00 - 20:00 CET	LIVE Q
Satel	lite sessions	
PROGR	ind Hollingsworth, Sanofi Pasteur	
2.	Burden of influenza diseases in people 65 years old and over Thomas Weinke, Klinikum Ernst von Bergmann, Germany	
3.	High dose influenza vaccine: benefits for older adults Marc Van Ranst, University of Leuven, Belgium	
4.	North America experience: high dose vaccine focus on long term care Stefan Gravenstein, Case Western Reserve University. United States of America	
5.	Q&A and Closing Remarks with Thomas Weinke, Marc Van Ranst, Stefan Gravenstein	

Tuesday 8 December, 20:00 - 20:30 CET Recap of the day: Highlights with Colin Russell and Marco Goeijenbier

Rosalind Hollingsworth, Sanofi Pasteur, United States of America

TIME Tuesday 8 December, 20:00 - 20:30 CET LIVE 🖗

# Wednesday 9 december

Wednesday 9 December, 08:00 - 08:15 CE1 Morning welcome lecture: Risk factors for severe outcomes following COVID-19 infection -results of a systematic literature review

Wednesday 9 December, 08:00 - 08:15 CET

TRACK: Keynote lectures

SPEAKER:

TIME

Pasi Penttinen, European Centre for Disease Prevention and Control (ECDC)

Wednesday 9 December, 08:00 - 10:00 CET Webinar: Cornerstones of pandemic preparedness and urgent actions

TIME Wednesday 9 December, 08:00 - 10:00 CET

CHAIR: Ab Osterhaus, TiHo, Hannover

1. Vaccination

Ab Osterhaus, RIZ, Hannover, Germany

Jonathan Anderson, Seqirus , Australia 2. Antivirals

Frederick Hayden, University of Virginia , USA

3. Non-medical interventions Angeliki Melidou, ECDC , Sweden

4. Cross-sector collaboration and communication

Sylvie Briand, World Health Organisation , Switzerland

Wednesday 9 December, 09:00 - 09:15 CET Good morning with Marco Goeijenbier

TIME Wednesday 9 December, 09:00 - 09:15 CET LIVE 🖗

supported by Roche

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# Wednesday 9 December, 12:00 - 13:00 CET **Poster Peek with Colin <u>Russell</u>**

Wednesday 9 December, 12:00 - 13:00 CET

Colin Russell discusses trending posters.

### Wednesday 9 December, 12:00 - 14:00 CET Animal influenza, ecology and epidemiology Wednesday 9 December, 12:00 - 14:00 CET TRACK Scientific Programme CHAIRS Malik Peiris, The University of Hong Kong Rodrigo Tapia, Virbac-Centrove PROGRAMME 1. Transmission dynamics of avian influenza viruses along poultry value chains in Bangladesh: a controlled field experiment Lisa Kohnle, City University of Hong Kong, Hong Kong S.A.R. (China) 2. In vivo and in vitro characterization of highly pathogenic influenza A virus (H5N8) neurotropism in duck and chicken. Thomas Figueroa, Université de Toulouse, ENVT, INRAE, UMR 1225, Toulouse, France 3. Sentinel Birds as an Indicator of the Influenza Virus Presence in the Natural Environment nen Tkachenko, National Scientific Center Institute of Experimental and Clinical Veterinary

- 4. LPAIV Prevalence, Subtype Diversity and Migration Connectivity of Dabbling Duck the Azov-Black Sea Region in Ukraine Denys Muzyka, National Scientific Center Institute of Experimental and Clinical Veterinary Medicine, Kharkiv, Ukraine
- 5. Case Report A case comparison of early versus late detection and depopulation of two chicken farms infected with highly pathogenic avian influenza virus during the 2015 H5N2 outbreak

### Kaitlyn St. Charles, Secure Food Systems Team, University of Minnesota, College of Veterinary Medicine, United States of America

### Wednesday 9 December, 12:00 - 14:00 CE1 Influenza, RSV disease and COVID-19 vaccination: current and future approaches

Wednesday 9 December, 12:00 - 14:00 CET

Scientific Programme

TRACK

CHAIRS Peter Openshaw, Imperial College London Dennis Lapuente, University Hospital Erlangen

### PROGRAMME

- 1. Contribution of neuraminidase to the efficacy of seasonal split influenza vaccines in the ferret model Miruna E. Rosu, Department of Viroscience, Erasmus Medical Center, Rotterdam 3015 CE, the Netherlands
- 2. Antigen modifications improve mRNA-based influenza virus vaccine efficacy in mice
- Alec W Freyn, Department of Microbiology, Icahn School of Medicine at Mount Sinai, New York, NY 10029; Graduate School of Biomedical Sciences, Icahn School of Medicine at Mount Sinai, New York, NY 10029
- 3. IL-1ß as mucosal vaccine adjuvant: Specific induction of tissue-resident memory T cells and enhanced protection against heterologous IAV Dennis Lapuente, Institute of Clinical and Molecular Virology, University Hospital Erlangen, Germa
- 4. A comprehensive influenza reporter virus panel for decomposing polyclonal sera using neutralization maps Adrian Creanga, National Institute of Allergy and Infectious Diseases, United States of America
- 5. CELL RESPONSE 2: Relative vaccine effectiveness against influenza-related hospitalizations and serious respiratory events during the 2018/19 influenza season in children and adults. Comparison between guadrivalent cell-based and egg-based influenza vaccines Joaquin Federico Mould-Ouevedo, Segirus Vaccines Ltd., Summit, NJ, USA

Meet the expert (sponsored by Roche): Management of Hospitalised Patients with Severe Influenza – limited availability, registration required

Wednesday 9 December, 09:00 - 09:30 CET TRACK

Keynote lectures

SPEAKERS-Tristan Clark, University of Southampton Jean-Paul Mira, Centre Hospitalier Paris Centre



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# Wednesday 9 December, 10:00 - 12:00 CET Satellite symposium organised by ESPID and ESWI. Should we introduce national live vaccination programmes for children? Wednesday 9 December, 10:00 - 12:00 CET TRACK Satellite sessions CHAIR: Terho Heikkinen, University of Turku AstraZeneca has provided a sponsorship grant towards this independent Programme PROGRAMME

1. Why is influenza an important disease in children? An introduction. Terho Heikkinen, University of Turku, Finland

- 2. Efficacy and safety of seasonal influenza vaccination in children Ab Osterhaus, TiHo, Hannover, Germany
- 3. The burden of paediatric influenza in the US: mortality, hospitalizations, outpatients visits and other outcome Patsy Stinchfield, Children's Hospitals and Clinics of Minnesota, United States of America
- 4. How to increase vaccine confidence and counter parental doubts on the safety and effectiveness of influenza vaccines? anna Nohynek, Finnish Institute for Health and Welfare, Finland
- 5. Debate: should we introduce live vaccination programmes for children? Terho Heikkinen, University of Turku, Finland

Keynote lecture: Transmission dynamics and control of COVID-19: what have we learned so far?

SPEAKER:

Wednesday 9 December, 12:00 - 12:30 CET

### TRACK: Keynote lectures

Neil Ferguson, Imperial College London

Wednesday 9 December, 14:00 - 14:30 CET

TRACK: Keynote lectures

TIME

SPEAKER: Heidi Larson, London School of Hygiene & Tropical Medicine

### Co-infections in influenza, RSV disease and COVID-19

Wednesday 9 December, 14:00 - 16:00 CET

TRACK: Scientific Programme

CHAIR:

TIME

Ed Hutchinson, University of Glasgow

PROGRAMM

- 1. The burden and clinical characteristics of viral respiratory disease before and during the SARS-CoV-2 pandemic Stephen Poole, NIHR Biomedical Research Centre Southampton, United Kingdom; University Hospitals Southampton NHS Trust
- 2. Evolution and selection of influenza a virus defective interfering particles in a semi-continuous production system for the use as antiviral Lars Pelz, Max-Planck Institute for Dynamics of Complex Technical Systems, Germany
- 3. Superinfection exclusion limits genome interactions during localised spread of influenza A viruses. Anna Sims, MRC-University of Glasgow Centre for Virus Research, United Kingdom
- 4. Aspergillosis Complicating Severe Influenza and Respiratory Syncytial Virus (RSV) in ICU Patients Hannah Hyochan Nam, University of California, Irvine, United States of America

Ris	Risk evaluation and communication strategies in influenza and COVID-19: lessons learned					
		SPI				
TIME:						
Wed	dnesday 9 December, 14:00 - 16:00 CET					
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Scie	ence Policy Interface					
CHAIF Pasi	R. I Penttinen, European Centre for Disease Prevention and Control (ECDC)					
PROG	SAMME					
1	1. Cross-sectoral collaboration and communication Tim Nguyen, World Health Organisation, Switzerland					
2	2. The role of experts in guiding policy Peter Openshaw, Imperial College London, United Kingdom					
3	<ol> <li>Reaching out to people at risk – focus on the elderly: why and how, Janet McElhaney, Health Sciences North Research Institute, Canada; Northern Ontario School of Medicine, Canada</li> </ol>					
4	<ol> <li>Talking vaccines is risky business: challenges in the post-trust environment Frederic Bouder, University of Stavanger, Norway</li> </ol>					

# Burden of influenza, RSV disease and COVID-19 and impact on society Wednesday 9 December, 14:00 - 16:00 CET Science Policy Interface CHAIRS: Rebecca Cox, University of Bergen Kathy Sze Man Leung, The University of Hong Kong PROGRAMM 1. Mortality Associated with Seasonal Influenza Epidemics in the European Union: Overall Estimates based on Respiratory Mortality from 2002-2011 John Paget, Nivel, Utrecht, the Netherlan

SPI

2. Excess Mortality and Healthcare Resource Use Attributed to Influenza in People at High Risk for Developing Complications: Real World Evidence from a US Managed Care Population

Susan C. Bolge, Janssen Global Services, LLC, Raritan, USA

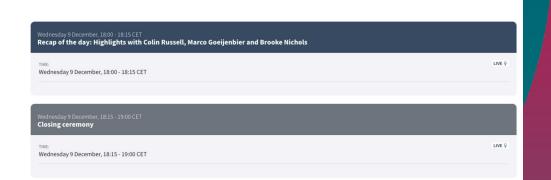
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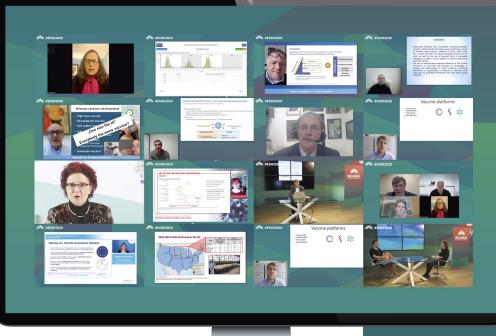
- 3. A Systematic Literature Review and a Meta-analysis of the Respiratory Syncytial Virus (RSV) Burden of Disease in Adults Over 60 Years of Age Miloje Savic, GSK, Wavre, Belgium
- 4. The disease burden of respiratory syncytial virus infection in young children in primary care: results from the RSV ComNet pilot in Italy and the Netherlands Jojanneke JGT van Summeren, Nivel, Netherlands Institute for Health Services Research, Utrecht, Netherlands, The

### Late Breakers: novel and outstanding scientific discoveries SCS LIVE & Wednesday 9 December, 16:00 - 18:00 CET TRACK: Scientific Programme CHAIR: Mariette Ducatez, INRAE PROGRAMM 1. The SARS-CoV-2 and other human coronavirus spike proteins are fine-tuned towards temperature and proteases of the human airways Manon Laporte, KU Leuven, Rega Institute for Medical Research, Belgium

- 2. The avian-to-human adaptation of the 1968 A/H3N2 pandemic influenza virus
- Zandra Felix Garza, Department of Medical Microbiology, Academic Medical Center, University of Amsterdam, Amsterdam, The Netherlands
- 3. Phase 1 trial Results of a Candidate Recombinant Virus-Like Particle Vaccine for Covid-19 Disease Produced in Plants and Adjuvanted with GSK's Pandemic Adjuvant Brian J. Ward, Medicago Inc., Canada: Research Institute of the McGill University Health Centre, Canada
- 4. The contrasting within-host evolutionary dynamics between seasonal and pandemic human influenza A viruses Alvin X. Han, Laboratory of Applied Evolutionary Biology, Department of Medical Microbiology, Amsterdam University Medical Center, Amsterdam, The Netherlands1Laboratory of Applied Evolutionary Biology, Department of Medical Microbiology, Amsterdam University Medical Center, Amsterdam, The Netherlands
- 5. Acute, Suprapharmacologic Dexamethasone Mobilizes Natural Killer T and Cytotoxic T cells for Influenza A/B-induced or COVID-19-induced ARDS Theresa Deisher, AVM Biotechnology, United States of America



# Proceedings of the conference will be Special Issue of Vaccine, Elsevier.





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Separate report of the Science Policy Interface track is disseminated end of December 2020 and downloadable on the influenzaconference.org site.