Programme

isirv International Society for Influenza and other Respiratory Virus Diseases

Correlates of Protection for Next Generation Influenza Vaccines: Lessons Learned from the COVID Pandemic

1 - 3 March 2023 Seattle | USA

Day 1 Wednesday 1 March

08:00	**Registration / Poster Mounting**
09:00	**Welcome and Opening Remarks** **Keith Klugman** Bill & Melinda Gates Foundation, USA
Session A	**Lessons Learned from the COVID-19 Pandemic and New COVID-19 Vaccine Platforms** Chairs: **Jacqueline Katz** The Taskforce for Global Health, USA **Ros Hollingsworth** Bill & Melinda Gates Foundation, USA
09:05	**Lessons Learned from New COVID Vaccines** **Sarah Gilbert** University of Oxford, UK
09:35	**Lessons Learned from the COVID Pandemic** **Cheryl Cohen** University of Witwatersrand, South Africa
09:55	**What Can We Learn from the Human Challenge of SARS-CoV-2 and Influenza?** **Chris Chiu** Imperial College London, UK
10:20	**SARS-CoV-2 Correlates of Protection** **Miles Davenport** Kirby Institute, UNSW Sydney, Australia

10:40	**BREAK**
Session B	**Next Generation/Universal Influenza Vaccine** **Chairs:** **Othmar Engelhardt** Medicines and Healthcare Products Regulatory Agency (MHRA), UK **Kanta Subbarao** WHO Collaborating Centre for Reference and Research on Influenza, Peter Doherty Institute for Infection and Immunity, Australia
11:10	**Universal Influenza Vaccine** **Florian Krammer** Icahn School of Medicine at Mount Sinai, USA
11:40	**Next Generation Influenza Vaccines** **Aaron Schmidt** Harvard Medical School; Ragon Institute of MGH, MIT and Harvard, USA
12:00	**Correlates of Protection from Cohort Studies to Guide Next Generation Influenza Vaccine** **Aubree Gordon** University of Michigan, USA
12:20	**Correlates of Protection for Next Generation/Universal Influenza Vaccine** **Arnold Monto** University of Michigan, USA
12:40	**LUNCH**
Session C	**Mucosal Correlates of Immunity and Protection** **Chairs:** **Ali Ellebedy** Washington University School of Medicine, USA **Rebecca Jane Cox** University of Bergen, Norway
14:00	**Mucosal Correlates of Immunity and Protection** **Peter Openshaw** Imperial College London, UK
14:30	**Mucosal Data from LAIV** **Kanta Subbarao** WHO Collaborating Centre for Reference and Research on Influenza, Peter Doherty Institute for Infection and Immunity, Australia
15:00	**The Role of Mucosal Immunity to Influenza** **Stacey Schultz-Cherry** St Jude Children's Research Hospital, USA

15:20	**Local Immunity After Influenza Vaccination** **Rebecca Jane Cox** University of Bergen, Norway
15:40	**The Role of Local Antibodies in SARS CoV-2 Protection** **Jennifer Gommerman** University of Toronto, Canada
16:00	**BREAK**
Session D	**Immunology: B and T Cell Responses** Chairs: **Florian Krammer** Icahn School of Medicine at Mount Sinai, USA **Diane Post** National Institute of Allergy and Infectious Diseases (NIAID), USA
16:30	**Role of Non HI Antibodies in Protection from Influenza** **Galit Alter** Harvard Medical School, USA
17:00	**Role of B Cells in Protection after Influenza Vaccination** **Ali Ellebedy** Washington University School of Medicine, USA
17:30	**CD8 T Cells in Protection from Influenza** **Paul Thomas** St. Jude Children's Research Hospital, USA
18:00	**Role of T Cells in Vaccine Responses** **Shane Crotty** La Jolla Institute for Immunology, USA
18:30	**WELCOME RECEPTION - POSTER SESSION I**

Day 2 Thursday 2 March

Session E

Immunological Assays: Lessons from International Consortia

Chairs: **Rebecca Jane Cox** University of Bergen, Norway **Paul Thomas** St Jude Children's Research Hospital, USA

09:00 **Lessons Learned from SARS CoV-2 Assays**
David Montefiori Duke University School of Medicine, USA **(remote)**

09:30 **Lessons Learned from FLUCOP: HA Antibody Assays**
Othmar Engelhardt Medicines and Healthcare Products Regulatory Agency (MHRA), UK

10:05 **Lessons Learned from FLUCOP: NA Antibody Assays**
Emanuele Montomoli University of Siena, Italy

10:20 **Lessons Learned from FLUCOP: T Cell Assays**
Gwenn Waerlop Ghent University, Belgium

10:40 **BREAK**

Session F

Regulatory Session

Chairs: **Jerry Weir** U.S Food and Drug Administration (FDA), USA **Chris Roberts** National Institutes of Health (NIH), USA

11:10 **Introduction to Regulatory Hurdles for Next Generation Influenza Vaccines**
David Vaughn Bill & Melinda Gates Foundation, USA

Regulators' Perspective
Jerry Weir Food and Drug Administration (FDA), USA
Marco Cavaleri European Medicines Agency (EMA), Netherlands **[remote]**

11:30 **PANEL DISCUSSION: How Can Correlates of Protection Help the Regulatory Process for Licensure of New Vaccines?**
Sarah Gilbert University of Oxford, UK
Chris Chiu Imperial College London, UK
Chris Roberts National Institutes of Health (NIH), USA
David Vaughn Bill & Melinda Gates Foundation, USA
Jerry Weir Food and Drug Administration (FDA), USA
Marco Cavaleri European Medicines Agency (EMA), Netherlands [remote]

12:30	**LUNCH**
Session G	**Optimal Study Design for Establishing Correlates of Protection** **Chairs:** **Joe Bresee** The Taskforce for Global Health, USA **Sheena Sullivan** WHO Collaborating Centre for Reference and Research on Influenza, Peter Doherty Institute for Infection and Immunity, Australia
13:45	**Influenza Vaccine Effectiveness** **Sheena Sullivan** WHO Collaborating Centre for Reference and Research on Influenza, Peter Doherty Institute for Infection and Immunity, Australia
14:15	**Novel Study Design to Support Correlates of Protection Studies** **Peter B. Gilbert** University of Washington, USA
14:45	**Mathematical Modelling of Correlates of Protection** **Miles Davenport** Kirby Institute, UNSW Sydney, Australia
15:05	**PANEL DISCUSSION – Study Design for Correlates of Protection** **Aubree Gordon** University of Michigan, USA **Miles Davenport** Kirby Institute, UNSW Sydney, Australia **Sheena Sullivan** WHO Collaborating Centre for Reference and Research on Influenza, Peter Doherty Institute for Infection and Immunity, Australia **Peter B. Gilbert** University of Washington, USA
16:00	**BREAK**

Session H
16:30-18:00

Oral Abstracts

Chairs: **S. Mark Tompkins** University of Georgia, USA **Emanuele Montomoli** University of Siena, Italy

Antibody titers and shedding dynamics of seasonal influenza infections in a South African community cohort (PHIRST), 2016-2017
Molly Sauter Princeton University, USA [ACOR0070]

Impact of COVID-19 vaccination on duration of viral shedding in asymptomatic and symptomatic infection
Nicole Ngai Yung Tsang WHO Collaborating Centre for Infectious Disease Epidemiology and Control, Hong Kong [ACOR0091]

Characterization of Viral Shedding and Particle Release from Humans Experimentally Infected with Seasonal H3N2 virus
Seema Lakdawala Emory University, USA [ACOR0096]

Trends in the age immunity profile of respiratory viruses throughout the COVID19 pandemic in Seattle, 2020-2022
Cecile Viboud Fogarty International Center, USA [ACOR0102]

Protective cross-reactive human monoclonal antibodies against influenza virus neuraminidases targeting the conserved catalytic site
Julia Lederhofer Vaccine Research Center/NIAID/NIH, USA [ACOR0033]

Mapping the differential adaptive immune dynamics to distinct influenza vaccine modalities using human tonsil organoids
Lisa Wagar University of California Irvine, USA [ACOR0097]

Baseline innate and T cell populations are correlates of protection against symptomatic influenza virus infection independent of serology
Robert Mettelman St. Jude Children's Research Hospital, USA [ACOR0069]

18:00 **EVENING RECEPTION - POSTER SESSION II**

DAY 3 Friday 3 March

Session I
09:00 – 10:30

Oral Abstracts

Chairs: **Chris Chiu** Imperial College London, UK **Stacey Schultz-Cherry** St. Jude Children's Research Hospital, USA

Distinct functional humoral immune responses are induced after live attenuated and inactivated seasonal influenza vaccination
Xin Tong MIT and Harvard, USA [ACOR0001]

Assessment of multiple immune correlates of protection against influenza using acute and convalescent sera from influenza natural infection
Min Levine Centers for Disease Control and Prevention, USA [ACOR0040]

Immune-history based correlates of protection for influenza and SARS-CoV-2
Tomer Hertz Ben Gurion University of the Negev, Israel [ACOR0061]

Post-vaccine cytokine levels that correlate with breakthrough influenza infections
Ewan P. Plant Food and Drug Administration, USA [ACOR0002]

Influenza vaccine responses to A(H1N1)pdm09 antigens in 2020 and 2021 among repeatedly vaccinated healthcare workers
Stephany Sanchez-Ovando University of Melbourne, Australia [ACOR0027]

Age-dependent induction of stalk-reactive antibodies with ADCC reporter activity by administration of a live-attenuated influenza virus vaccine to children
Juan Manuel Carreno Quiroz Icahn School of Medicine at Mount Sinai, USA [ACOR0064]

Pre-existing SARS-CoV-2 antibodies and risk of breakthrough infection in a prospective cohort, Seattle, March-November 2022
Alpana Waghmare University of Washington, USA [ACOR0101]

10:30 **BREAK**

Session J **11:00-12:30**	**Oral Abstracts** **Chairs:** **Florian Krammer** Icahn School of Medicine at Mount Sinai, USA **Diane Post** National Institute of Allergy and Infectious Diseases (NIAID), USA
	Matrix M adjuvanted H5N1 vaccine elicits broadly neutralizing antibodies and neuraminidase inhibiting antibodies in humans that correlate with in vivo protection **Fan Zhou** University of Bergen, Norway [ACOR0019] **Human influenza virus challenge identifies cellular correlates of protection for oral vaccination** **David McIlwain** Stanford University, USA [ACOR0079] **An influenza hemagglutinin stem-only Immunogen elicits a broadly cross-reactive memory B cell response in humans** **Sarah Andrews** National Institutes of Health, USA [ACOR0039] **SARS-CoV-2 correlates of protection conferred by natural immunity: comparative analysis of pre-exposure neutralizing antibody titers against Delta and Omicron variant infection** **Kaiyuan Sun** National Institutes of Health, USA [ACOR0021] **Detailed estimates of correlates of protection for SARS-CoV-2, stratified by key VOC and key covariates** **Tim Russell** London School of Hygiene and Tropical Medicine, UK [ACOR0098] **Antibody effector function and T cell responses to homologous and heterologous inactivated or mRNA vaccines against SARS-CoV-2** **Carolyn Cohen** University of Hong Kong, Hong Kong [ACOR0013]
12:30	**LUNCH**

Session K **13:30-14:30**	**Recap of Sessions A-D**
	Group Discussion **Lessons Learned from COVID for Identifying Correlates of Protection and Developing Consensus on Immune Responses to Target** **Florian Krammer** Icahn School of Medicine at Mount Sinai, USA **Sarah Gilbert** University of Oxford, UK **Rebecca Jane Cox** University of Bergen, Norway **Kanta Subbarao** WHO Collaborating Centre for Reference and Research on Influenza, Peter Doherty Institute for Infection and Immunity, Australia **Cheryl Cohen** University of Witwatersrand, South Africa
14:30	**BREAK**
Session L **15:00-16:00**	**Recap of Sessions E-G**
	Group Discussion **The Way Forward in Correlates of Protection and their Detection for Next Generation Vaccines** **Jerry Weir** FDA, USA **Jacqueline Katz** The Taskforce for Global Health, USA **Othmar Engelhardt** Medicines and Healthcare Products Regulatory Agency (MHRA), UK **Sheena Sullivan** WHO Collaborating Centre for Reference and Research on Influenza, Peter Doherty Institute for Infection and Immunity, Australia **S. Mark Tompkins** University of Georgia, USA
16:00	**End of Meeting - Closing Remarks** **Ros Hollingsworth** Bill & Melinda Gates Foundation, USA