

**ITMAT 16th Annual International Symposium
Monday and Tuesday, October 11-12, 2021
Perelman School of Medicine, University of Pennsylvania
Smilow Center for Translational Research (SCTR)
The Arthur Rubenstein Auditorium
3400 Civic Center Boulevard, Philadelphia, PA**

Translational Science in a Pandemic World

Monday, October 11 (Day 1)

8:00 AM Registration and Breakfast: Smilow Lobby

8:30 ***Introduction***

Garret A. FitzGerald, MD, FRS, Director, Institute for Translational Medicine and Therapeutics, McNeil Professor in Translational Medicine and Therapeutics, Perelman School of Medicine, University of Pennsylvania

8:35 J. Larry Jameson, MD, PhD, Executive Vice President, University of Pennsylvania for the Health System, and Dean, Perelman School of Medicine, University of Pennsylvania

Session 1: Origins and Transmission of COVID-19

Chairs: Frederic D. Bushman, PhD, Chair, William Maul Measey Microbiology Professor, Perelman School of Medicine, University of Pennsylvania, Adjunct Faculty, The Children's Hospital of Philadelphia and Sara Cherry, PhD, Director, Program for Chemogenomic Discovery, Penn Center for Precision Medicine, Professor of Microbiology, Perelman School of Medicine, University of Pennsylvania

8:45 ***Coronavirus Activation and Antagonism of Host Antiviral Response Pathways***

Susan Weiss, PhD, Professor and Vice Chair, Department of Microbiology, Co-Chair, Center for Research on Coronaviruses and Other Emerging Pathogens, Perelman School of Medicine, University of Pennsylvania

9:15 ***Bats and Viruses in the Context of COVID-19***

Linfa Wang, PhD BSc, Professor, Programme in Emerging Infectious Diseases, Duke-NUS Medical School

9:45 ***Genetic and Immunological Causes of Life-threatening COVID-19***

Jean Laurent Casanova, MD, PhD, Levy Family Professor, The Rockefeller University

10:15 Coffee break

Session 2: *The Immune Response to COVID-19*

Chairs: Carl H. June, MD, Director, Center for Cellular Immunotherapies, Director, Parker Institute for Cancer Immunotherapy, Richard W. Vague Professor in Immunotherapy, Perelman School of Medicine, University of Pennsylvania and Shaon Sengupta, MBBS, MPH, FAAP, Assistant Professor of Pediatrics, Perelman School of Medicine, Attending Physician, Neonatal-Perinatal Medicine, The Children's Hospital of Philadelphia, University of Pennsylvania

10:45 ***Immune Responses to SARS-CoV-2***

Akiko Iwasaki, PhD, Waldemar Von Zedtwitz Professor of Immunobiology; of Molecular, Cellular and Developmental Biology; and of Dermatology; Investigator, HHMI

11:15 ***T Cell Exhaustion in Disease***

John Wherry, PhD, Chair, Department of Systems Pharmacology and Translational Therapeutics, Perelman School of Medicine, University of Pennsylvania

11:45 ***Age-specific Mortality and Immunity Patterns of SARS-CoV-2***

Megan O'Driscoll, MSc, Department of Genetics, University of Cambridge

12:15 PM Lunch break

Session 3: *Heterogeneity of the Clinical Phenotype*

Chairs: Sharlene M. Day, MD, Presidential Associate Professor of Medicine and Genetics, Director of Translational Research, Division of Cardiovascular Medicine and Penn Cardiovascular Institute, Perelman School of Medicine, University of Pennsylvania and Daniel J. Rader, MD, Chair, Department of Genetics, Seymour Gray Professor of Molecular Medicine, Perelman School of Medicine, University of Pennsylvania

1:15 ***Comprehensive Analysis of a Few Hundred COVID-19 Patients from Infection through Recovery***

James Heath, PhD, President and Professor, Institute for Systems Biology, Seattle, WA

1:45 ***Characterizing the Heterogeneous Host Response to SARS-CoV-2***

Nuala Meyer, MD, MTR, Associate Professor, Perelman School of Medicine, University of Pennsylvania

2:15 ***Applications of Proteomics to Understand Host Responses to SARS-CoV-2***

Tiannan Guo, MD, PhD, Assistant Professor, Westlake University, Hangzhou

2:45 ***Machine Learning of Cellular Perturbations in Single Cell Genomics to Model Response to SARS-CoV-2***

Fabian Theis, MSc, PhD, Professor, Institute of Computational Biology,
Helmholtz Zentrum München and Depts. Mathematics & Life Sciences, TU
München

3:15 Coffee break

Session 4: Unexpected Consequences of COVID-19

Chairs: Michael S. Parmacek, MD, Chair, Department of Medicine, Frank Wister
Thomas Professor of Medicine, Perelman School of Medicine, University of
Pennsylvania and Trevor M. Penning PhD, Director of the Center of Excellence
in Environmental Toxicology, Thelma Brown and Henry Charles Molinoff
Professor of Pharmacology, Perelman School of Medicine, University of
Pennsylvania

3:45 **Did Environmental Changes During Lockdowns Influence Health?**
Paolo Vineis, MD, MPH, Professor, Imperial College, London

4:15 **Effects of the Surge in Biomedical Research During COVID-19: Some
Changes are Here to Stay**
Holden Thorp, PhD, Editor-in-Chief, Science Family of Journals, Washington,
D.C

4:45 **Conclusion**

7:30 **Reception and Dinner: The College of Physicians of Philadelphia**
19 South 22nd Street, Philadelphia

Dinner Speaker: Tony Barber, Former Editor, Financial Times: "Emergence into
a Post Pandemic World"

Tuesday, October 12 (Day 2)

8:30 AM Registration and Breakfast: Smilow Lobby

Session 5: Treatment Response to COVID-19

Chairs: Terri M. Laufer, MD, Attending Rheumatologist, Penn Presbyterian
Medical Center, Attending Rheumatologist, Philadelphia VA Medical Center,
Associate Professor of Medicine, Perelman School of Medicine, University of

Pennsylvania and Akhilesh B. Reddy, MB, BChir, PhD, FRCP, Associate Professor of Pharmacology, Perelman School of Medicine, University of Pennsylvania

- 9:00 ***Human Antibody Responses to SARS-CoV-2***
Michel C. Nussenzweig, MD, PhD, Zanvil A Cohn and Ralph M Steinman
Professor, The Rockefeller University
- 9:30 ***Antibody Cocktails to Fight Infectious Disease: Discovering & Developing REGEN-COV in Record Time to Treat and Prevent COVID-19***
George Yancopoulos, MD, PhD, President & CSO, Regeneron Pharmaceuticals, Inc., Tarrytown, NY
- 10:00 ***Bispecific Antibodies Against SARS-CoV-2***
Luca Varani, PhD, Institute for Research in Biomedicine, Universita' della Svizzera Italiana, Bellinzona (Switzerland)
- 10:30 Coffee break
- 11:00 ***Host Factor Targeted Drug Discovery for SARS-CoV-2 Through an International Collaboration***
Nevan Krogan, PhD, Professor of Cellular Molecular Pharmacology, University of California San Francisco and Director, Quantitative Biosciences Institute and an investigator at Gladstone Institutes
- 11:30 ***ACE2 – from Discovery to the Heart of a Pandemic***
Josef Penninger, MD, Director, Life Sciences Institute, University of British Columbia, Vancouver
- 12:00 PM Lunch Break

Session 6: *The Pandemic Response*

Chairs: Glen N. Gaulton, PhD, Vice Dean, Director, Center for Global Health, Professor, Pathology and Laboratory Medicine, Perelman School of Medicine, University of Pennsylvania and Sarah Tishkoff, PhD, Director, Penn Center for Global Genomics and Health Equity, David and Lyn Silfen University Professor, Perelman School of Medicine, University of Pennsylvania

- 1:00 ***Characterizing SARS-CoV-2 Transmission Through China's Response***
Kaiyuan Sun, PhD, Postdoctoral Fellow, Fogarty International Center, National Institutes of Health, Bethesda, MD
- 1:30 ***Evolution and Epidemic Spread of SARS-CoV-2 in Brazil***

Ester Cerdeira Sabino, MD, PhD, Professor, Instituto de Medicina Tropical/
Faculdade de Medicina da Universidade de Sao Paulo

2:00 ***The Response to COVID-19 in Australia – Science Informing Policy***
Sharon Lewin, MB BS, FRACP, PhD, Professor, The Peter Doherty Institute for
Infection and Immunity, The University of Melbourne

2:30 ***Aspects of Science in the UK Response***
Sir Patrick Vallance, FRS, FMedSci, FRCP, United Kingdom Government Chief
Scientific Adviser

3:00 Break

Session 7: *Vaccines*

Chairs: Sir Keith Peters, FRS, FMedSci, Emeritus Regius Professor of Physic,
University of Cambridge and Sir John S. Savill, FMedSci, FRSE, FRS, Executive
Director Melbourne Academic Centre for Health, Vice-Chancellor's Fellow
University of Melbourne and Regius Professor of Medical Science University of
Edinburgh

3:30 ***Development of mRNA for Therapy***
Katalin Karikó, PhD, Senior Vice President, BioNTech SE, Adjunct Associate
Professor, Perelman School of Medicine, University of Pennsylvania

4:00 ***The Development of a COVID-19 Vaccine***
Andrew Pollard, FRCPCH, PhD, FMedSci, Professor of Paediatric Infection and
Immunity, University of Oxford, UK

4:30 ***Nucleoside-modified mRNA Therapeutics***
Drew Weissman, MD, PhD, Professor, Perelman School of Medicine, University
of Pennsylvania

5:00 ***Concluding Remarks***
Garret A. FitzGerald, MD, FRS, Director, Institute for Translational Medicine and
Therapeutics, McNeil Professor in Translational Medicine and Therapeutics,
Perelman School of Medicine, University of Pennsylvania