

**ITMAT 17th Annual International Symposium  
Monday and Tuesday, October 10-11, 2022  
Perelman School of Medicine, University of Pennsylvania  
Smilow Center for Translational Research (SCTR)  
The Arthur H. Rubenstein Auditorium  
3400 Civic Center Boulevard, Philadelphia, PA**

**Translational Neuroscience Coming of Age**

**Monday, October 10 (Day 1)**

8:25            ***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

***Session 1: Neurological Consequences of Viral Infection***

***Chairs:*** Frances E. Jensen, MD, FACP, Arthur Knight Asbury, MD Professor of Neurology, Chair of the Department of Neurology, Co-Director Penn Medicine Translational Neuroscience Center, University of Pennsylvania and Erle S. Robertson, PhD, Harry P. Schenck Professor in Otorhinolaryngology, Perelman School of Medicine, University of Pennsylvania

8:30            ***Mechanisms of virus-mediated neurologic dysfunction***  
Robyn S. Klein, MD, PhD, The Robert E. and Louise F. Dunn Professor of Medical Sciences, Director, Center for Neuroimmunology & Neuroinfectious Diseases, Professor, Departments of Medicine, Pathology & Immunology, Neurosciences, Washington University School of Medicine, St. Louis

9:00            ***EBV as a causal agent in multiple sclerosis***  
Alberto Ascherio, MD, PhD, Professor of Epidemiology and Nutrition, Professor of Medicine, Harvard University

9:30            ***Epstein-Barr Virus is a Trigger for Multiple Sclerosis***  
William Robinson, MD, PhD, Professor of Medicine, Director of Center for Neuroimmunology & Neuroinfectious Diseases, Stanford University

10:00          ***Coffee Break***

***Session 2: PASC***

***Chairs:*** Amit Bar-Or, MD, FRCPC, Director, Center for Neuroinflammation and Neurotherapeutics Chief, Multiple Sclerosis Division Melissa and Paul Anderson President's Distinguished Professor, Perelman School of Medicine, University of Pennsylvania and Sharlene Day, MD, Director, Translational Research, Division of Cardiovascular Medicine and Cardiovascular Institute Presidential Associate Professor, Perelman School of Medicine, University of Pennsylvania

- 10:30 ***Tomorrow and Tomorrow and Tomorrow: Unraveling the mystery of Neurological Post-Acute Sequelae of COVID-19***  
Serena S. Spudich, MD, Gilbert H. Glaser Professor, Chief of Neuroinfectious Diseases and Global Neurology, Yale School of Medicine
- 11:00 ***Overview of Long Covid and its Cardiovascular Consequences***  
Ziyad Al-Aly, MD, Chief of Research and Development and Director of Clinical Epidemiology Center, VA Saint Louis Health Care System
- 11:30 ***Computational Approaches to Integrating Patient Data Clouds***  
Jim Heath, PhD, President, Institute for Systems Biology and Professor, University of Washington Bioengineering
- 12:00 ***Long COVID (PASC) in children and young people***  
Terence Stephenson, DM, FRCPCH, FRCP, Nuffield Professor of Child Health. UCL Great Ormond Street Institute of Child Health, University College London. Honorary Consultant Paediatrician, UCLH and Great Ormond Street Hospital. Chair, Health Research Authority for England.
- 12:30 ***Lunch***
- Session 3: *Novel Therapeutics in Translational Science***
- Chairs:*** Elizabeth A. Heller, PhD, Assistant Professor of Pharmacology, Perelman School of Medicine, University of Pennsylvania and Mark Kahn, MD, Edward S. Cooper, M.D./Norman Roosevelt and Elizabeth Meriwether McLure Professor, Perelman School of Medicine, University of Pennsylvania
- 1:30 ***Moving amyotrophic lateral sclerosis into the precision medicine era***  
Bryan J. Traynor, MD, PhD, FRCP, Senior Investigator, National Institute on Aging, NIH
- 2:00 ***Nucleoside-Modified mRNA-LNP Therapeutics***  
Drew Weissman, MD, PhD, Roberts Family Professor of Vaccine Research, Perelman School of Medicine, University of Pennsylvania
- 2:30 ***mRNA-based CART therapy for Fibrosis***  
Jonathan A. Epstein, MD, William Wikoff Smith Professor, Executive Vice Dean and Chief Scientific Officer, Perelman School of Medicine at the University of Pennsylvania, Senior Vice President and Chief Scientific Officer, University of Pennsylvania Health System, University of Pennsylvania
- 3:00 ***Break***
- Session 4: *Novel Tools and Technologies in Translational Science***
- Chairs:*** Michael Platt, PhD, Director, Wharton Neuroscience Initiative, James S. Riepe Penn Integrates Knowledge (PIK) University Professor, Department of Neuroscience, Perelman School of Medicine, Marketing Department, Wharton School of Business, Department of Psychology, School of Arts and Sciences, University of Pennsylvania and Virginia Lee, PhD, John H. Ware 3rd Endowed

Professor in Alzheimer's Research, Perelman School of Medicine, University of Pennsylvania

3:30 ***Discovery of genomic loci of the human cerebral cortex using genetically informed brain atlases***

Chi-Hua Chen, PhD, Associate Professor, UC San Diego

4:00 ***Deciphering tissue microenvironment by integrative analysis of spatial transcriptomics with histology images and single cells***

Mingyao Li, PhD, Professor of Biostatistics, University of Pennsylvania

4:30 ***Learning useful representations of cell state from morphology***

Calvin Jan, PhD, Principal Investigator, Calico Life Sciences, LLC

5:00 ***Conclusion***

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7:00 **Reception and Dinner: The College of Physicians of Philadelphia**

19 South 22<sup>nd</sup> Street, Philadelphia

**Dinner Speaker:** Fintan O'Toole

Fintan O'Toole is a polemicist, literary editor, journalist and drama critic for The Irish Times, for which he has written since 1988. O'Toole was drama critic for the *New York Daily News* from 1997 to 2001 and is a regular contributor to *The New York Review of Books* and *The Guardian*. His latest book is "We Don't Know Ourselves: A Personal History of Modern Ireland".

*Transportation will be provided to and from the dinner. Buses will depart from the front of the Perelman Center for Advanced Medicine (circular driveway in front of building that connects to the Smilow Center for Translational Research) at 6:40PM and will return to the Hilton Inn at Penn at approximately 9:00PM.*

*Speakers and chairs may take a shuttle bus from the Hilton Inn at Penn, Walnut Street entrance, departing at 6:40PM, returning to the hotel at approximately 9:00PM.*

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## **Tuesday, October 11 (Day 2)**

### **Session 5: Aging**

**Chairs:** Nancy M. Bonini, PhD, Florence R.C. Murray Professor of Biology, School of Arts and Sciences, University of Pennsylvania and Foteini Mourkioti, PhD, Assistant Professor of Orthopaedic Surgery, co-Director, Musculoskeletal Regeneration Program at Penn Institute for Regenerative Medicine, Perelman School of Medicine, University of Pennsylvania

9:00 ***Immune-metabolic mechanisms of cognitive decline in aging***  
Katrin Andreasson, MD, Professor, Department of Neurology and Neurological Sciences, Stanford University School of Medicine, Stanford, CA

9:30 ***Immunometabolic checkpoints of inflammation***  
Vishwa Deep Dixit, DVM, PhD, Waldemar Von Zedtwitz Professor of Pathology, Director, Yale Center for Research on Aging, Yale School of Medicine

10:00 ***Processes that influence the rate of aging***  
Cynthia Kenyon, PhD, Vice President, Aging Research, Calico Life Sciences, LLC

10:30 ***Coffee break***

**Chairs:** Montserrat C. Anguera, PhD, Associate Professor, Department of Biomedical Sciences, University of Pennsylvania School of Veterinary Medicine and Shinjae Chung, PhD, Assistant Professor of Neuroscience, Perelman School of Medicine, University of Pennsylvania

11:00 ***Epigenetics of Learning and Memory: How to fix too much or too little memory?***  
Shelley Berger, PhD, Daniel S. Ochs University PIK Professor, Director, Epigenetics Institute, University of Pennsylvania

11:30 ***Integrative Functional Genomics for Target and Biomarker Discovery in Neurodegenerative Disease***  
Towfique Raj, PhD, Associate Professor, Icahn School of Medicine at Mount Sinai

12:00 ***Lunch Break***

### **Session 6: Molecular Clocks and Aging**

**Chairs:** Amita Sehgal, PhD, John Musser Professor of Neuroscience, Director Chronobiology and Sleep Institute, Perelman School of Medicine, University of Pennsylvania and Sigrid C. Veasey, MD, Professor of Medicine, Perelman School of Medicine, University of Pennsylvania

1:00 ***Circadian regulation of glial function in brain aging and neurodegeneration***  
Erik S. Musiek, MD, PhD, Charlotte & Paul Hagemann Professor of Neurology, Washington University School of Medicine, St. Louis

- 1:30      ***The Aging Chronobiome***  
Carsten Skarke, MD, Adjunct Associate Professor of Medicine, Robert L. McNeil Jr. Fellow in Translational Medicine and Therapeutics, Institute for Translational Medicine and Therapeutics (ITMAT), Perelman School of Medicine, University of Pennsylvania
- 2:00      ***Coffee break***
- Session 7:    *Aging Related Organ Dysfunction***
- Chairs:*** Nick van Bruggen, PhD, Head of Human Biology, Calico Life Sciences, LLC and Daniel J. Rader, MD, Seymour Gray Professor of Molecular Medicine, Chair of the Department of Genetics, Chief of the Division of Translational Medicine and Human Genetics in the Department of Medicine, Associate Director of the Institute for Translational Medicine and Therapeutics, co-director of the Penn Medicine Biobank, Perelman School of Medicine, University of Pennsylvania
- 2:30      ***FGF23 and age-related manifestations of disease***  
Ken White, PhD, Professor of Medical and Molecular Genetics, Indiana University School of Medicine
- 3:00      ***The role of cellular senescence in age-related bone loss***  
Sundeep Khosla, MD, Dr. Francis Chucker and Nathan Landow Research Professor, Mayo Foundation Distinguished Investigator, Mayo Clinic College of Medicine
- 3:30      ***Predicting Longevity - Integrative Modeling of Plasma Biomarkers and Imaging Across Disease Space***  
Eugene Melamud, PhD, Principal Investigator, Calico Life Sciences, LLC
- 4:00      ***Mapping the genetic, epigenetic, genomic and cellular architecture of kidney disease***  
Katalin Susztak, MD, PhD, Department of Medicine and Genetics, Perelman School of Medicine, University of Pennsylvania
- 4:30      ***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