

ITMAT 2025

20th Annual
International Symposium

Oct. 13–14, 2025

Translational Science;
20 Years A - Growing



**ITMAT 20th Annual International Symposium
Monday and Tuesday, October 13-14, 2025
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 Science; 20 Years A - Growing

Monday, October 13 (Day 1)

8:00 ***Registration and breakfast open***

8:20 ***Introductions***

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

8:25 Jonathan A. Epstein, MD

Executive Vice President, University of Pennsylvania for the Health System & Dean, Raymond and Ruth Perelman School of Medicine, Robert G. Dunlop Professor of Medicine

8:30 ***Special Lecture***

Chair: Garret A. FitzGerald, MD, FRS, Director, Institute for Translational Medicine and Therapeutics, Perelman School of Medicine, University of Pennsylvania

Developing and Deploying Personalized Gene-Editing Therapies

Kiran Musunuru, MD, PhD, MPH, ML, MRA, Barry J. Gertz, Professor for Translational Research Perelman School of Medicine at the University of Pennsylvania

Session 1: *The Geospatial Landscape*

Chairs: [Nancy A. Speck, PhD](#), John W. Eckman Professor in Medical Science II, Chair, Perelman School of Medicine Department of Cell and Developmental Biology, University of Pennsylvania and [Kenneth S. Zaret, PhD](#), Joseph Leidy Professor, Director, The Institute for Regenerative Medicine, Perelman School of Medicine, University of Pennsylvania

9:00 ***Understanding Cardiovascular Health and Disease at the Single Cell Level***

Michela Nosedà, MD, PhD, Reader in Cardiovascular Science, National Heart and Lung Institute, London, UK

9:30 ***Spatially Resolved Human Kidney Single-Cell Maps Reveal Key Disease Subtypes***
Katalin Susztak, MD, PhD, Professor, Perelman School of Medicine, University of Pennsylvania

10:00 ***Coffee Break***

Session 2: *Intestinal Regulation of Systemic Health*

Chairs: [Sara Cherry, PhD](#), John W. Eckman Professor of Medical Science, Director, Program for Chemogenomic Discovery, University of Pennsylvania School of Medicine and [Gary D. Wu, MD](#), Ferdinand G. Weisbrod Professor in Gastroenterology, Co-Vice Chief for Research, Division of Gastroenterology and Hepatology, Perelman School of Medicine, University of Pennsylvania

10:30 ***Early-Life Determinants of Metabolic Health***
Tadeja Gracner, PhD, MSc, Senior Economist, University of Southern California, Center for Economic and Social Research

11:00 ***Functional Genomics Bridges the gap to Mechanism***
Ramnik J. Xavier, MD, PhD, Core Institute Member, Broad Institute / Professor of Medicine, Harvard Medical School

11:30 ***Cancer Metabolism Across Scales***
Gary Patti, PhD, Michael and Tana Powell Professor, Washington University in St. Louis

12:00 ***Lunch & Exhibit***
“Innovating Science Communication Through Art”
Marguerita Hagan, BFA, MFA, ITMAT Artist-in-Residence 2024-26
and Carsten Skarke, MD, Director, ITMAT Education Initiatives, Perelman School of Medicine, University of Pennsylvania

Session 3: *Novel Translational Tools and Technologies*

Chairs: [Julie A. Blendy, PhD](#), Professor of Pharmacology, Chair, Pharmacology Graduate Group, University of Pennsylvania School of Medicine and [Drew Weissman, MD, PhD](#), Roberts Family Professor in Vaccine Research, Director of Vaccine Research, Infectious Diseases Division, Perelman School of Medicine, University of Pennsylvania

1:00 ***Synthetic G Protein-Coupled Receptors for Programmable Sensing and Control of Cell Behavior***
Nicholas A. Kalogiropoulos, PhD, Department of Genetics, Stanford University

- 1:30 ***Parallel Phosphoproteomics and Metabolomics Map the Global Metabolic Tyrosine Phosphoproteome***
Alissandra Hillis, PhD, Massachusetts Institute of Technology, Koch Institute for Integrative Cancer Research
- 2:00 ***Lipid nanoparticles for overcoming biological barriers to mRNA delivery***
Michael J. Mitchell, PhD, Associate Professor of Bioengineering, School of Engineering and Applied Science and Penn Institute for RNA Innovation, University of Pennsylvania
- 2:30 ***Coffee Break***
- Session 4: *Inter Organ Axes of Communication***
- Chairs:*** [Nuala J. Meyer, MD, MS \(MSTR\)](#), Professor of Medicine (Pulmonary, Allergy and Critical Care) at the Hospital of the University of Pennsylvania, Director, Center for Translational Lung Biology, Department of Medicine, Perelman School of Medicine, University of Pennsylvania and [Daniel J. Rader, MD](#), Seymour Gray Professor of Molecular Medicine, Perelman School of Medicine, University of Pennsylvania
- 3:00 ***Immunogenic Control of Sleep in Cardiovascular Disease***
Cameron McAlpine, PhD, Associate Professor, Cardiovascular Research Institute, Department of Medicine, Cardiology, and Department of Neuroscience, Icahn School of Medicine at Mount Sinai
- 3:30 ***Protozoan Commensals in the Gut Shape Lung Immunity and Respiratory Disease Outcomes***
Kyle Burrows, PhD, Assistant Professor, Faculty of Health Sciences, Simon Fraser University, Vancouver, Canada
- 4:00 ***Unexpected Communication Between Muscle and the Pituitary Gland in the Control of Reproduction***
Daniel J. Bernard, PhD, Professor of Pharmacology and Therapeutics, McGill University, Montreal, Canada
- 4:30 ***Obesity and vascular insulin resistance***
Stefan Offermanns, Director, Max Planck Institute for Heart and Lung Research; Professor of Pharmacology, Goethe University, Frankfurt, Germany
- 5:00 ***Conclusion***
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- 6:30 ***Reception and Dinner: The College of Physicians of Philadelphia***
19 South 22nd Street, Philadelphia

Dinner Discussant:

Roger Cohen Pulitzer Prize Winner and Paris Bureau Chief of The New York Times

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 6:10PM 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 6:10PM, returning to the hotel at approximately 9:00PM.

Tuesday, October 14 (Day 2)

8:00 ***Registration and breakfast open***

Session 5A: *The Biology of Aging*

Chairs: [Alice S. Chen-Plotkin, MD](#), Parker Family Professor of Neurology, Perelman School of Medicine, University of Pennsylvania, Attending Neurologist, Hospital of the University of Pennsylvania and [David A. Wolk, MD](#), Professor of Neurology, Perelman School of Medicine, University of Pennsylvania, Attending Neurologist, Hospital of the University of Pennsylvania

9:00 ***Brain-Wide Cell-Type-Specific Transcriptomic Signatures of Healthy Ageing in Mice***

Kelly Jin, PhD, Scientist, Allen Institute for Brain Science, Washington

9:30 ***Epigenetic Reprogramming During Aging and Rejuvenation***

Juan Carlos Izpisua Belmonte, PhD, Founding Scientist and Director, San Diego Institute of Science, Altos Labs, San Diego Institute of Science

10:00 ***Dissecting the cellular communities driving distinct trajectories of brain aging and dementia***

Philip L. De Jager, MD, PhD, Weil-Granat Professor of Neurology, Director, Center for Translational & Computational Neuroimmunology, Deputy Director, Taub Institute for Research on Alzheimer's Disease and the Aging Brain, Columbia University Irving Medical Center, New York

10:30 ***Coffee Break***

Session 5B: *The Biology of Aging*

Chairs: [Elisabetta Manduchi, PhD](#), Senior Bioinformatics Scientist, Perelman School of Medicine, University of Pennsylvania and [Robert H. Vonderheide, MD, DPhil](#), Director, Abramson Cancer Center of the University of Pennsylvania, Vice Dean, Cancer Programs, Perelman School of Medicine, University of Pennsylvania

11:00 ***Impact of Aging on Lung Tumorigenesis and Regenerative Potential***
Tuomas Tammela, MD, PhD, Associate Member, Memorial Sloan Kettering Cancer Center, New York

11:30 ***Decoding the Cellular Basis of Mammalian Aging at the Whole Organismal Scale***
Junyue Cao, PhD, Assistant Professor, The Rockefeller University, New York

12:00 ***Lunch Break***

Session 6A: *Shaping the Immune Response*

(i) *The Immuno-Lipidic Interface*

Chairs: [Bonnie Ky, MD, MSCE](#), Founders Professor of Cardio-Oncology, Director, Thalheimer Center of Cardio-Oncology, Perelman School of Medicine, University of Pennsylvania

1:00 ***Foam Cells in Cancer***
Mattias Belting, MD, PhD, Professor of Oncology, Consultant Neuro-Oncologist, Lund University, Sweden.

1:30 ***The Immunolipidic Interface***
Emanuela Riciotti, PharmD, PhD, Research Associate Professor, University of Pennsylvania

2:00 ***Cancer Cell Derived PGE₂ Impairs Monocyte Mediated T Cell Stimulation***
Anaïs Elewaut, PhD, Research Institute of Molecular Pathology (IMP), Vienna, Austria

2:30 ***Break***

Session 6B: *Shaping the Immune Response*

(ii) *Modulation of the Immuno-inflammatory Response*

Chairs: [Erika Holzbaur, PhD](#), Director, Pennsylvania Muscle Institute, Perelman School of Medicine, University of Pennsylvania and [Aalim M. Weljie, PhD](#), Associate

Professor of Pharmacology, Perelman School of Medicine, University of Pennsylvania

- 3:00 ***Immune Evasion by Cancer Cells through Mitochondrial Transfer***
Yosuke Togashi, MD, PhD, Professor, Department of Tumor Microenvironment, Faculty of Medicine, Dentistry and Pharmaceutical Sciences (Medicine), Okayama University, Japan
- 3:30 ***You Are What You Can Eat: Fueling CD8+ T Cells Smart***
Shixin Ma, PhD, Assistant Professor, Shenzhen Medical Academy of Research and Translation, China
- 4:00 ***Lipidomic Profiling of Mouse and Human Neurons Reveal a Role for Mboat7 in mTOR-Dependent Neuronal Migration***
Isaac Tang, MS, Neuroscience Graduate Program, University of California, San Diego
- 4:30 ***Concluding Remarks***
Garret A. FitzGerald, MD, FRS, Director, Institute for Translational Medicine and Therapeutics, Perelman School of Medicine, University of Pennsylvania