ITMAT 12th Annual International Symposium
Monday and Tuesday, October 16-17, 2017
Perelman School of Medicine, University of Pennsylvania
Smilow Center for Translational Research (SCTR)
The Arthur Rubenstein Auditorium
3400 Civic Center Boulevard, Philadelphia, PA

Structures, Technologies and Discoveries in Translational Science

Monday, October 16 (Day 1)

8:00 AM	Registration and Breakfast: Smilow Lobby
8:45	***Introduction*** 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: Chairs:	***Models of Translational Science and Precision Medicine*** Jonathan A. Epstein, MD, Executive Vice Dean and Chief Scientific Officer William Wikoff Smith Professor of Medicine, Perelman School of Medicine at the University of Pennsylvania and Julie A. Blendy, PhD, Professor of Pharmacology, Chair, Pharmacology Graduate Group, Perelman School of Medicine at the University of Pennsylvania
9:00	***Optimizing the environment for experimental medicine and the end of Cartesian dualism*** Sir Robert Lechler, MB, ChB, PhD, FRCP, FRCPath, Professor, King's College London
9:30	***Structure and Drug Discoveries in the Kyoto University - Astellas Pharma Alliance Project*** Shuh Narumiya, MD, PhD, Professor and Director, Medical Innovation Center, Kyoto University Graduate School of Medicine

10:00 ***Precision Medicine and Neurodegenerative Diseases***
Tom Maniatis, PhD, Isidore S. Edelman Professor and Chair, Department of Biochemistry and Molecular Biophysics, Columbia University; Director, Columbia Precision Medicine Initiative, Columbia University Medical Center

10:30 COFFEE: Smilow Lobby

Session 2: ***Tools and Technologies - Part 1***
Chairs: Desmond Fitzgerald, MD, President, University of Limerick, Ireland and James Eberwine, PhD, Elmer Holmes Bobst Professor, Systems Pharmacology and Translational Therapeutics, Co-Director of the Penn Program in Single Cell Biology, Perelman School of Medicine at the University of Pennsylvania

11:00 ***Single-cell RNA-Seq***
Itai Yanai, PhD, Director, Institute for Computational Medicine and Professor of Biochemistry and Molecular Pharmacology, NYU Langone

11:30 ***Proteomics for signalling and clinical studies***
Matthias Mann, PhD, Director, Max Planck Institute of Biochemistry, Germany

12:00 PM ***The future is unsupervised***
Casey Greene, PhD, Assistant Professor of Systems Pharmacology and Translational Therapeutics, University of Pennsylvania

12:30 LUNCH: Smilow Lobby

Session 3: ***Pain and Inflammation – Part 1***
Chairs: Carlo Patrono, MD, Catholic University School of Medicine, Rome, Italy and Shelley L. Berger, PhD, Daniel S. Och University Professor, Department of Cell and Development Biology, Perelman School of Medicine at the University of Pennsylvania

1:30 ***Recognition of cellular dyshomeostasis by the inflammasome***
Eicke Latz, MD, PhD, Institute of Innate Immunity, University of Bonn, Germany.

2:00 ***New mechanisms of inflammasome activation and autoinflammatory disease***
Seth L. Masters, PhD, The Walter and Eliza Hall Institute, Australia

2:30 COFFEE: Smilow Lobby

Session 4: ***Pain and Inflammation – Part 2***

Chairs: Tilo Grosser, MD, Research Associate Professor, Department of Systems Pharmacology and Translational Therapeutics, Perelman School of Medicine at the University of Pennsylvania and Sarah Millar, PhD, Professor, Departments of Dermatology and Cell & Developmental Biology, Vice-Chair for Basic Research, Department of Dermatology, Director, Skin Biology and Diseases Resource-based Center, Perelman School of Medicine at the University of Pennsylvania

3:00 ***Genetic editing in pain; towards pain precision medicine***
Clifford Woolf, MB, BCh, PhD, Director, F.M. Kirby Neurobiology Center, Professor of Neurology and Neurobiology, Boston Children's Hospital, Harvard Medical School

3:30 ***Non-toxic pain killers designed by modeling of pathological receptor conformations***
Christoph Stein, MD, PhD, Professor and Chair, Charité Campus Benjamin Franklin – Freie Universitaet Berlin

4:00 ***Pannexin channels: potential therapeutic targets in neuropathic pain***
Doug Bayliss, PhD, Joseph & Frances Larner Professor & Chair of Pharmacology, University of Virginia

4:30 ***Endocannabinoid-based analgesics***
Daniele Piomelli, PhD MD (h.c.)
Professor, Louise Turner Arnold Chair in the Neurosciences, University of California, Irvine

7:00 **Reception and Dinner: The College of Physicians of Philadelphia**
19 South 22nd Street, Philadelphia
Dinner Speaker: Sir Keith Peters**,** FRCP, FRS, FMedSci, Emeritus Regius Professor of Physic, University of Cambridge, Consultant in Clinical Science and Translational Medicine to the Francis Crick Institute

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.

<u>Tuesday, October 17 (Day 2)</u>

8:30 AM Registration and Breakfast: Smilow Lobby

Session 5: ***Human Phenomic Science***

Chairs: Katherine L. Nathanson, MD, Professor, Department of Medicine, Translational Medicine & Human Genetics, Associate Director for Population Science, Abramson Cancer Center, Perelman School of Medicine at the University of Pennsylvania and Anne Cappola, MD, ScM, Professor of Medicine; Co-Director,

Center for Human Phenomic Science, Assistant Director, Institute for Translational Medicine and Therapeutics, Perelman School of Medicine at the University of Pennsylvania

9:00 ***Translational Genomics: Linking Genotype to Phenotype at Scale***
Daniel J Rader, MD, Seymour Gray Professor of Molecular Medicine; Chair, Department of Genetics; Associate Director, ITMAT, Perelman School of Medicine at the University of Pennsylvania

9:30 ***The DiscovEHR Collaboration: a Model for Translational Science***
David J. Carey, PhD, Professor and Chair, Department of Molecular and Functional Genomics, Geisinger Health System

10:00 ***Epigenomics in health and disease***
John Chambers, MD, PhD, Professor, Imperial College London, UK & National Technological University, Singapore

10:30 COFFEE: Smilow Lobby

Session 6: Tools and Technologies - Part 2
Chairs: Kenneth S. Zaret, PhD, Joseph Leidy Professor, Director, Institute for Regenerative Medicine, Department of Cell and Developmental Biology, Perelman School of Medicine at the University of Pennsylvania and Ian A. Blair, PhD, A. N. Richards Professor and Vice-Chair, Department of Systems Pharmacology and Translational Therapeutics, Director, Penn Superfund Research and Training Program Center, Perelman School of Medicine at the University of Pennsylvania

11:00 ***Do bats hold the secret of extended longevity?***
Emma Teeling, BSc, MSc, PhD, Professor, University College Dublin, Ireland

11:30 ***Tissue rejuvenation by anti-senescence and pro-reprogramming strategies***
Manuel Serrano, PhD, Program Director, Spanish National Cancer Research Center (CNIO)

12:00 PM ***Bioluminescence imaging of G protein-coupled receptor activation in living mice***
Richard L. Proia, PhD, Chief, Genetics of Development and Disease Branch, National Institute of Diabetes and Digestive and Kidney Diseases, National Institutes of Health

12:30 ***A new look into tissue function using multispectral optoacoustic tomography***
Vasilis Ntziachristos, MSc, PhD, Professor, Director, Chair of Biomedical Imaging, Technical University Munich and Helmholtz Zentrum Munich

1:00 LUNCH: Smilow Lobby

Session 7: ***Neuroscience, Space and Time – Part 1***

Chairs: Maria A. Oquendo, MD, PhD, Ruth Meltzer Professor and Chairman of Psychiatry, Perelman School of Medicine at the University of Pennsylvania, President, American Psychiatric Association. President, International Academy of Suicide Research and Elizabeth A Heller, PhD**,** Assistant Professor of Pharmacology, Core Faculty, Penn Epigenetics Program, Perelman School of Medicine at the University of Pennsylvania

2:00 ***Computational Psychiatry***
Ray Dolan, MD, FRS, Professor, University College London

2:30 ***Medial entorhinal cortex reactivates waking experiences in sleep, independent of the hippocampus***
Jozsef Csicsvari, PHD, Professor, Institute of Science and Technology Austria

3:00 COFFEE: Smilow Lobby

Session 8: ***Neuroscience, Space and Time – Part 2***

Chairs: Dr. Amita Sehgal, PhD, John Herr Musser Professor of Neuroscience, Investigator, HHMI, Perelman School of Medicine at the University of Pennsylvania and John A. Dani, PhD, David J. Mahoney Professor of Neurological Sciences; Chair, Department of Neuroscience; Director, Mahoney Institute for Neurosciences, Perelman School of Medicine at the University of Pennsylvania

3:30 ***Molecular architecture of the circadian clock in mammals***
Joseph S. Takahashi, PhD, Professor and Chair, Department of Neuroscience, Investigator, Howard Hughes Medical Institute, UT Southwestern Medical Center

4:00 ***Time in the basal ganglia***
Joseph Paton, PhD, Principal Investigator, Champalimaud Research

4:30 ***Expanding mechanisms and therapeutic targets for neurodegenerative disease***
Aaron D. Gitler, PhD, Associate Professor, Stanford University

5:00 **Concluding Remarks**
Garret A. FitzGerald, MD, FRS, Perelman School of Medicine at the University of Pennsylvania