

**ITMAT 8<sup>th</sup> Annual International Symposium**  
**Monday and Tuesday, October 14-15, 2013**  
**Perelman School of Medicine, University of Pennsylvania**  
**Smilow Center for Translational Research (SCTR)**  
**The Arthur Rubenstein Auditorium**  
**3400 Civic Center Boulevard, Philadelphia, PA**

***Harnessing the Paradox: Personalization and the Science of Scale***

**Monday, October 14**

- 8:15 AM      **Registration and breakfast (SCTR Commons)**
- 9:15 AM      **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
- 9:30 AM      **1. 1 The Biomedical Research Landscape**  
  
Chairs: Sir Keith Peters, MB BCH (Wales), FRCP, FRS, Emeritus Regius Professor of Physic, University of Cambridge, Consultant in Clinical Science and Translational Medicine to the Francis Crick Institute and Senior Consultant in R&D to GlaxoSmithKline and Benjamin F. Voight, PhD, Assistant Professor, Department of Pharmacology and Department of Genetics, University of Pennsylvania - Perelman School of Medicine
- 9:30 AM      ***Systems Medicine, Transformational Technologies and the Emergence of Proactive P4 Medicine (Predictive, Preventive, Personalized and Participatory)***  
  
Leroy Hood, MD, PhD, President, Institute for Systems Biology
- 10:00 AM      ***Optogenetic Control of Cellular Physiology and Neural Circuits***  
  
Daniel Schmidt, PhD, Postdoctoral Fellow, MIT Media Lab and McGovern Institute, Departments of Biological Engineering and Brain and Cognitive Sciences, MIT
- 10:30 AM      **COFFEE BREAK**

**11:00 AM**      **1.2 The Biomedical Research Landscape**

Chairs: Kathleen T. Brady, MD, PhD, Distinguished University Professor, Associate Provost, Clinical and Translational Science, Director, South Carolina Clinical and Translational Research Institute and Daniel J. Rader, MD, Professor of Medicine, Perelman School of Medicine at the University of Pennsylvania

11:00 AM      ***Early Translational Research: Demonstrating Value***

Professor Dame Sally C. Davies, MB, ChB (Manchester); FMedSci, Chief Medical Officer (England) and Chief Medical Advisor to UK Government, Department of Health

11:30 AM      ***UK Biobank: An Open Access Resource for Health Research***

Sir Rory Collins, FMed Sci, FRCP, Professor of Medicine and Epidemiology, Clinical Trial Service Unit & Epidemiological Studies Unit, University of Oxford

Noon              **LUNCH – Commons Area, Smilow Translational Research Center**

**1:00PM**              **2.1 Microbiomics**

Chairs: Robert W. Doms, M.D., Ph.D., Pathologist-in-Chief, The Children's Hospital of Philadelphia, Professor of Pathology and Laboratory Medicine, Perelman School of Medicine, University of Pennsylvania and Beatrice H. Hahn, MD, Professor, Departments of Medicine and Microbiology, Perelman School of Medicine, Division of Hematology and Oncology, University of Pennsylvania

1:00 PM              ***Perturbing the Early Life Microbiome and its Consequences***

Martin J. Blaser, MD, George and Muriel Singer Professor of Medicine, Professor of Microbiology, Director, Human Microbiome Program, New York University Langone Medical Center

1:30 PM              ***The Human Microbiome in Health and Disease***

Frederic Bushman, PhD, Professor of Microbiology, Perelman School of Medicine at the University of Pennsylvania

2:00 PM

***Diet-Microbiota-Health Interactions in Older Persons***

Paul W. O'Toole, PhD, Professor of Microbial Genomics, Dept. Microbiology & Alimentary Pharmabiotic Centre, University College Cork, Ireland

2:30 PM

**COFFEE BREAK**

3:00 PM

**2.2 Microbiomics**

Chairs: Katherine Luzuriaga, MD, Professor, Pediatrics and Molecular Medicine, Director, U Mass Center for Clinical and Translational Science, Associate Provost, Global Health and Anantha Shekhar, MD, PhD, Director, Indiana Clinical and Translational Sciences Institute, Assistant Vice President for Research, Raymond E. Houk Professor and Associate Dean for Research, Indiana University School of Medicine

3:00 PM

***Donor Feces Infusion for Treatment of Recurrent Clostridium Difficile Infection***

Josbert J. Keller, MD, PhD, Haga Teaching Hospital, The Hague, The Netherlands

3:30 PM

***The Architecture of Complex Disease: Genes, Sex, Bugs and Diabetes***

Jayne Danska, PhD, Senior Scientist, Program in Genetics and Genome Biology, the Hospital for Sick Children, Professor, Department of Immunology and Department of Medical Biophysics, Faculty of Medicine, University of Toronto, Toronto, Canada

6:30PM

**Reception and Dinner: The College of Physicians of Philadelphia, 19 South 22<sup>nd</sup> Street, Philadelphia**

Dinner Speaker: Christopher P. Austin, MD, Director, National Center for Advancing Translational Sciences, NIH

*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 9PM.*

*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 9PM*

Tuesday, October 15

9:00 AM Registration and breakfast (SCTR Commons)

9:30 AM **3.1 Metabolomics and Metabolism**

Chairs: Ian Blair, PhD, Professor of Pharmacology, University of Pennsylvania Perelman School of Medicine, Department of Pharmacology, Center for Cancer Pharmacology and Rebecca D. Jackson, MD, Associate Dean for Clinical Research, Director OSU Center for Clinical and Translational Science and Professor, Division of Endocrinology, Diabetes and Metabolism, The Ohio State University Wexner Medical Center

9:30 AM ***Towards a Comprehensive Understanding of Metabolism***

Joshua D. Rabinowitz, MD, PhD, Professor of Chemistry and Integrative Genomics, Princeton University

10:00 AM ***A Metabolic Vulnerability of Tumors Revealed by the Lowly Yeast***

Benjamin P. Tu, PhD, Assistant Professor, UT Southwestern Medical Center

10:30 AM COFFEE

11:00 AM **3.2 Metabolomics and Metabolism**

Chairs: Mark A. Lemmon, PhD, George W. Raiziss Professor and Chair of Biochemistry and Biophysics, University of Pennsylvania Perelman School of Medicine and Mary B. Leonard, MD, MSCE, Professor of Pediatrics and Epidemiology, Director, Office of Clinical and Translational Research, The Children's Hospital of Philadelphia

11:00 AM ***Human Metabolic Disease: Lessons from Genetics***

Sir Stephen O'Rahilly, MD, FRS, Professor of Clinical Biochemistry & Medicine, Director of the University of Cambridge Metabolic Research Laboratories, Co-Director of the Institute of Metabolic Science, University of Cambridge

11:30 AM      ***Targeting Cancer Metabolism***

Chi Van Dang, MD, PhD, Director, Abramson Cancer Center, John H. Glick, MD  
Abramson Cancer Center Director's Professor, Perelman School of Medicine at  
the University of Pennsylvania

Noon            LUNCH

1:00 PM      **4. Emerging Technologies and Concepts in Translation**

Chairs: John Hogenesch, PhD, Professor of Pharmacology, Interim Director,  
Institute for Biomedical Informatics, Associate Director, Penn Genome Frontiers  
Institute, Perelman School of Medicine, University of Pennsylvania and  
Tom Curran, PhD, FRS, Deputy Scientific Director, The Children's Hospital of  
Philadelphia Research Institute, Professor of Pathology and Laboratory  
Medicine, University of Pennsylvania, Cell & Developmental Biology, Perelman  
School of Medicine, Associate Director Translational Genomics, University of  
Pennsylvania

1:00 PM      ***Human Organs on Chips and Programmable Nanotherapeutics***

Donald E. Ingber, MD, PhD, Founding Director, Wyss Institute for Biologically  
Inspired Engineering at Harvard University, Judah Folkman Professor of  
Vascular Biology, Harvard Medical School & Vascular Biology Program, Boston  
Children's Hospital, Professor of Bioengineering, Harvard School of Engineering  
and Applied Sciences

1:30 PM      ***Data-mining Pharmacology Data for Drug Repositioning and Safety  
Improvement***

John P. Overington, BSc, PhD, MBCS, FRSC, C. Chem., Head of Chemistry and  
Molecular Systems Resources, European Bioinformatics Institute (EMBL-EBI),  
Wellcome Trust Genome Campus, UK

2:00 PM      COFFEE

2:30 pm

***Reproductive and Reprogramming Approaches for Treatment of mtDNA Disease***

Shoukhrat Mitalipov, PhD, Oregon National Primate Research Center, Oregon Health & Science University

3:00 PM

***The Human Brain Project: from Phenomena to Biology***

Richard Frackowiak, MA, MD, DSc, Professor, Centre Hospitalier Universitaire Vaudois (CHUV) Lausanne, Switzerland

3:30 pm

***Concluding Remarks***

Garret A. FitzGerald, MD, FRS, Perelman School of Medicine, University of Pennsylvania

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