



ITI Human Immune Monitoring Technology and Bioinformatics Conference

Sponsored by the
Center for Human Systems Immunology (PD: Mark M. Davis)

Organizing Committee: Catherine Blish, Purvesh Khatri & Bali Pulendran

Thursday, May 2nd - Friday May 3rd 2019, Berg Hall, Li Ka Shing Center, Stanford

Thursday, May 2, 2019

07:30–08:30 BREAKFAST

08:30–08:45 **Welcome & Opening Remarks**

Lynda Stuart, MD, PhD, Bill and Melinda Gates Foundation

Mark Davis, PhD, Bali Pulendran, PhD, Catherine Blish, MD, PhD, Purvesh Khatri, PhD,
Stanford

Session Chair: Bali Pulendran, PhD

08:50–09:15 Bruce Walker, MD, Ragon Institute of MGH, MIT and Harvard

Prospects for a T-Cell Mediated Functional Cure of HIV Infection

09:20–09:45 Justin Sonnenburg, PhD, Stanford

Establishing the Diet-Microbiome-Immune Axis in Humans

09:50–10:15 Carolyn Bertozzi, PhD, Stanford

Chemical Technologies for Infectious Disease Diagnostics

10:20–10:45 Olivier Gevaert, PhD, Stanford

Multi-Scale Modeling to Study Complex Diseases

10:50–11:05 COFFEE BREAK

11:05–11:30 Nima Aghaeepour, PhD, Stanford

Multiomics Analysis of Term and Preterm Human Pregnancy

11:35–12:00 Petter Brodin, MD, PhD, Karolinska Institute

Shaping of Human Immune Systems by Environmental Factors Early in Life

12:05–12:30 Nathan Price, PhD, Institute for Systems Biology, Seattle

Longitudinal Multi-omic Profiling for Thousands of People

12:30–01:15 LUNCH & POSTER VIEWING

Session Chair: Purvesh Khatri, PhD

01:15–01:40 Mike Snyder, PhD, Stanford

Big Data and Health



- 01:45-02:10 Joel Dudley, PhD, Icahn School of Medicine of Mount Sinai
Moving from Precision Medicine to Next Generation Healthcare
- 02:15-02:40 William Shih, PhD, Harvard
HiFi Molecular Transmission via Crisscross Cooperativity
- 02:45-03:10 X. Shirley Liu, PhD, Dana-Farber Cancer Institute
Hidden Immunology Signals in Tumor RNA-seq
- 03:10-03:30 COFFEE BREAK & POSTER VIEWING
- 03:30-03:55 Crystal Mackall, MD, Stanford
Engineering T Cells for Cancer Therapy
- 04:00-04:25 Evan Newell, PhD, Fred Hutchinson Cancer Research Center
Decomposing Disease Associated T cell Responses Using Mass Cytometry
- 04:30-04:55 Ami Bhatt, MD, PhD, Stanford
Genomic Approaches to Decipher Microbial Contributions to Health and Disease
- 05:00-05:25 Somuya Raychaudhari, MD, Harvard Broad Institute
Defining the Architecture of Rheumatoid Arthritis at the Single Cell Level
- 05:30-06:30 **RECEPTION AND POSTER SESSION**

Friday, May 3, 2019

- 08:00-08:30 BREAKFAST
- Session Chair: Mark M. Davis, PhD*
- 08:30-08:55 Hal Drake-Smith, University of Oxford, MRC Weatherall Institute
Iron Powers Adaptive Immunity: Implications for Vaccinations
- 09:00-09:25 Sarah Fortune, MD, Harvard
Single Cell RNAseq Analysis of TB Granulomas: Defining Therapeutic Challenges
- 09:30-09:55 Yueh-hsiu Chien, PhD, Stanford
A Multi-Cohort Study of the Immune Factors Associated with M. Tuberculosis Infection Outcomes
- 10:00-10:25 H. Tom Soh, PhD, Stanford
Multiplexed Protein Measurements with High Sensitivity and Resolution
- 10:25-10:40 COFFEE BREAK & POSTER VIEWING
- 10:40-11:05 Mark M. Davis, PhD
Tools for T cells
- 11:10-11:35 Nir Yosef, PhD, UC Berkeley
Metabolic Modeling with Single-Cell RNA-Seq Reveals Actionable Targets in Autoimmunity



- 11:40–12:05 Rhiju Das, PhD, Stanford
Inexpensive Diagnostics for Ratiometric Gene Signatures through Designer Riboswitches
- 12:10–01:10 LUNCH
- Session Chair: Catherine Blish, MD, PhD*
- 01:10–01:35 Andrea Radtke, PhD, NIH
Advanced Optical Imaging Approaches to Understand Human Immunity in a Tissue Context
- 01:40–02:05 Garry Nolan, PhD, Stanford
Pathology from the Molecular Scale on Up
- 02:10–02:35 William Greenleaf, PhD, Stanford
Integrative, Multiomic, Single-Cell Dissection of Mixed-Phenotype Acute Leukemia.
- 02:40–03:05 Manu Prakash, PhD, Stanford
Octo-pi: Open Reconfigurable High-Throughput Imaging Platforms for Field Diagnosis of Infectious Disease
- 03:10–03:25 COFFEE BREAK
- 03:25–03:50 Elizabeth Egan, MD, PhD, Stanford
New Approaches to Discover Host Erythrocyte Factors for Malaria
- 03:55- 04:20 Kari Nadeau, MD, PhD, Stanford
Studying Immunological Mechanisms to Try to End Food Allergy
- 04:25–04:50 Rosa Bacchetta, MD, Stanford
New Approaches to Dissect Immune Dysregulation in Children with Genetic Immune Diseases
- 04:55- 05:20 Steven Deeks, MD, UCSF
Towards and HIV Cure: Untangling the Immunology of HIV Persistence during Antiretroviral Therapy
- 05:25- 05:30 **Closing Remarks, Mark Davis, PhD, Stanford**