

# KEYSTONE SYMPOSIA

on Molecular and Cellular Biology

## Tuberculosis: Immunity and Immune Evasion (A2)

January 16-20, 2020 • Eldorado Hotel & Spa • Santa Fe, New Mexico, USA

Scientific Organizers: Joel Ernst, Jennifer Philips and Daniel L. Barber

Part of the Keystone Symposia Global Health Series, supported by the Bill & Melinda Gates Foundation

Global Health Travel Award Deadline: August 13, 2019 / Discounted Abstract & Scholarship Deadline: September 24, 2019 / Abstract Deadline: October 16, 2019 / Discounted Registration Deadline: November 19, 2019

### THURSDAY, JANUARY 16

#### Arrival and Registration

### FRIDAY, JANUARY 17

#### Welcome and Keynote Address

**Eric Goosby**, University of California, San Francisco / United Nations, USA

*Global Solutions to Elimination of Tuberculosis: The Roles of Immunology and Vaccines*

#### TB Vaccines and Vaccine Immunology

**Patricia A. Darrach**, NIAID, National Institutes of Health, USA  
*Mechanisms of Immune Protection by Systemic BCG Vaccination*

**Thomas J. Scriba**, University of Cape Town, South Africa  
*Immune Responses to Diverse TB Vaccines in Humans*

**Ann M. Ginsberg**, International AIDS Vaccine Initiative, USA  
*TB Vaccine Human Efficacy Trials - What Have We Learned? Where Are We Headed?*

#### Short Talks Chosen from Abstracts

#### Workshop 1: B Cells to the Rescue?

#### Short Talks Chosen from Abstracts

#### Impact of Host and Pathogen Diversity

**Chetan Seshadri**, University of Washington, USA  
*Interferon Gamma Independent Immune Markers of Mycobacterium Tuberculosis Exposure*

**Sara Suliman**, Brigham and Women's Hospital, USA  
*A Human Genetic Determinant of Progression to Active TB*

**Shabaana Khader**, Washington University School of Medicine, USA  
*Immunity to Drug-Resistant TB*

**Sarah M. Fortune**, Harvard TH Chan School of Public Health, USA  
*Single Cell RNAseq Reveals Novel Correlates of TB Granuloma Fate*

#### Short Talks Chosen from Abstracts

#### Poster Session 1

### SATURDAY, JANUARY 18

#### Mechanisms of T Cell Protection

**Marc K. Jenkins**, University of Minnesota Medical School, USA  
*Development and Determinants of CD4 T Cell Responses to Intracellular Bacteria*

**Cecilia S. Lindestam Arlehamn**, La Jolla Institute for Allergy and Immunology, USA  
*Diversity of Antigenic Targets in Human Tuberculosis*

**Daniel L. Barber**, NIAID, National Institutes of Health, USA  
*Protective CD4 T Cell Responses to M. tuberculosis Infection*

**Paul Ogongo**, University of California, San Francisco, USA  
*Compartmentalization of M. tuberculosis-Specific Human T-Cells in the Lung*

#### Short Talks Chosen from Abstracts

#### Workshop 2: Will DURTs Clean Up?

#### Short Talks Chosen from Abstracts

#### Immunometabolism and Host-Directed Therapies

**Amit Singhal**, Singapore Immunology Network, Singapore  
*Reprogramming Host Immunometabolic Circuits for Designing TB HDT*

**Sarah A. Stanley**, University of California, Berkeley, USA  
*Modulation of Innate Immune Responses in Tuberculosis*

**Jennifer Philips**, Washington University School of Medicine, USA  
*Targeting Host Metabolism to Treat TB*

#### Short Talks Chosen from Abstracts

#### Poster Session 2

### SUNDAY, JANUARY 19

#### Lessons from other Persisters

**Steven Holland**, NIAID, National Institutes of Health, USA  
*Are Infections in the Lung and Outside it the Same? Host Factors in Mycobacterial Tissue Specificity*

**Nevil J. Singh**, University of Maryland, USA  
*Impact of Persistent Antigenic Stimulation on CD4 T Cell Function*

**David L. Sacks**, NIAID, National Institutes of Health, USA  
*Monocyte and Dendritic Cell Determinants of Immunity to Leishmania*

**Haina Shin**, Washington University, USA  
*Antiviral Control of Chronic HSV Infection*

#### Short Talks Chosen from Abstracts

#### Mechanisms of T Cell Evasion

**Joel D. Ernst**, University of California, San Francisco, USA  
*Dendritic Cell and Macrophage Dichotomy in Tuberculosis: What Goes Wrong after T Cell Priming?*

**Samuel M. Behar**, University of Massachusetts Medical School, USA  
*Differential Processing of M. tuberculosis Antigens in Priming and Persistence*

**Kevin B. Urdahl**, University of Washington, USA  
*Barriers to Immunity in the TB Granuloma*

#### Short Talks Chosen from Abstracts

#### Poster Session 3

### MONDAY, JANUARY 20

#### Pathogen Determinants of Immune Evasion

**Steven A. Porcelli**, Albert Einstein College Of Medicine, USA  
*M. tuberculosis Manipulation of MHC Class II Antigen Presentation*

**Olivier Neyrolles**, IPBS, CNRS-University of Toulouse, France  
*C-Type Lectin Receptors in Immunity to Tuberculosis*

**Maximiliano Gutierrez**, Francis Crick Institute, UK  
*Mycobacterium tuberculosis Evasion of Xenophagy in the Cytosol of Host Cells*

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**Oren S. Rosenberg**, University of California, San Francisco, USA

*Structure and Function of ESX Secretion in Mycobacteria*

**Short Talks Chosen from Abstracts**

### Workshop 3: Radical Immune Modulation for Treatment of XDR-TB

**Short Talks Chosen from Abstracts**

### Trained Immunity and Control of TB

**Mihai G. Netea**, Radboud University, Netherlands

*Trained Immunity to Intracellular Pathogens*

**Maziar Divangahi**, McGill University, Canada

*Are Tolerance and Training Required to End TB?*

**Simone A. Joosten**, Leiden University Medical Center, Netherlands

*Trained Immunity in TB Exposure*

**Short Talk Chosen from Abstracts**

### Meeting Wrap-Up: Outcomes and Future Directions (Organizers)

## TUESDAY, JANUARY 21

Departure