KEYSTONE SYMPOSIA  
on Molecular and Cellular Biology  
Tuberculosis: Science Aimed at Ending the Epidemic (EK10)  
December 2-4, 2020 • Virtual at your computer  
Scientific Organizers: Anne G. Kasmar, Bruno B. Andrade, Rodrigo Corrêa-Oliveira and David Alland  
Part of the Keystone Symposia Global Health Series, supported by the Bill & Melinda Gates Foundation

WEDNESDAY, DECEMBER 2

Welcoming Remarks and Keynote Address (8am Denver/Mountain Time Start)
*Anne G. Kasmar, Genentech, USA
Soumya Swaminathan, World Health Organization, Switzerland
Taking Science-Based Solutions to Scale

Breakthroughs in Biomarkers (8:40am Denver/Mountain Time Start)
*Bruno B. Andrade, Fundação Oswaldo Cruz, Brazil
Breakthroughs from Brazil and Beyond
*Mark Hatherill, University of Cape Town, South Africa
Can Host Blood Transcriptomic Biomarkers of Tuberculosis Inform Therapy?

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Patricia A. Darrah, NIAID, National Institutes of Health, USA
Mechanisms of Protection in Nonhuman Primates
Robert L. Modlin, University of California, Los Angeles, USA
Tricytotoxic CTLs in Leprosy and TB
*Katrin D. Mayer-Barber, NIAID, National Institutes of Health, USA
Unexpected Aspects of Granuloma Biology
*Milton Ozório Moraes, Oswaldo Cruz Institute–Fiocruz, Brazil
Short Talk: Autophagy and Host Metabolism in Leprosy

Emily Strong, University of Texas Medical Branch, USA
Short Talk: Identification of Autophagy Inhibiting Factors of Mycobacterium tuberculosis by High Throughput Loss of Function Screening
Kerry Hilligan, NIAID, National Institutes of Health, USA
Short Talk: Intravenous BCG Vaccination Transiently Depletes Alveolar Macrophages and Contributes to Protection against Mtb via Long-Term Remodeling of the Pulmonary Myeloid Compartment

Priyantha Talukdar, University of Pittsburgh, USA
Short Talk: Type III Interferons Are Expressed in Tuberculous Granulomas and Promote Inflammatory Phenotypes in Macrophages that Differ from Type I Interferons
Stacey Reanna Bartlett, Translational Research Institute–Mater Research Institute, Australia
Short Talk: GPR183 Oxysterol Axis Is Dysregulated at the Site of Disease during M. tuberculosis Infection

THURSDAY, DECEMBER 3

Back to Bacterial Basics (8am Denver/Mountain Time Start)
Olivier Neyrolles, IPBS, CNRS-University of Toulouse, France
The Biology of Metals in Mycobacterial Virulence and Antimycobacterial Immunity
David R. Sherman, University of Washington, USA
How MTB Sees the Host-Pathogen Interface
Cressida Madigan, University of California, San Diego, USA
Short Talk: Live-Imaging M. Leprae

Babak Javid, University of California San Francisco, USA
Targeting Adaptive Mycobacterial Translation as Anti-Virulence Strategies
*Deborah T. Hung, Broad Institute of MIT & Harvard, USA
Mining PROSPECT for TB Drugs
Todd A. Gray, New York State Department of Health, USA
Short Talk: The Abundant Small Proteome of Mycobacterium tuberculosis

Naila Cristina Soler Camargo, University of São Paulo, Brazil
Short Talk: Pseudogenization as a Source of Genetic Variability to the Mycobacterium tuberculosis Complex
*Oyindamola Adefisayo, Weill Cornell Medicine, USA
Short Talk: Functional Characterization of the Transcriptional Response to DNA Damage in Mycobacteria
Jamie H. Corro, State University of New York at Albany, USA
Short Talk: Visualization of Dormancy Induced by Ribosome Hibernation in Zinc-Starved Mycobacteria

* Session Chair † Invited but not yet accepted  
For the most up-to-date details, visit https://www.keystonesymposia.org.
Meet the Editors (12:30pm Denver/Mountain Time Start)
Salvatore Fabbiano, Cell Press, USA
George Hills, Sage Publications, UK
Zeljko Durdevic, EMBO Press, Germany
Francesca Dickens, Frontiers, UK

Data to Drive Innovation (3pm Denver/Mountain Time Start)
Gabriel D. Victora, Rockefeller University, USA
Clonal Dynamics of the Antibody Response
Sarah M. Fortune, Harvard TH Chan School of Public Health, USA
Multiscale Approaches Decipher the Many Faces of Altered Drug Susceptibility in Mycobacterium Tuberculosis
* Purvesh Khatri, Stanford University, USA

Adventures of a Data Parasite: Using Heterogeneity in "Dirty Data" to Accelerate Translational Medicine
Christopher M. Sassetti, University of Massachusetts Medical School, USA
Modeling Genetic Diversity in TB Susceptibility
Shabaana A. Khader, Washington University School of Medicine, USA
Tuberculosis Strain Diversity Drives Immune Response
* Shuyi Ma, University of Washington, USA
Short Talk: Data-Driven Inference of Drug Synergy
Caylin G. Winchell, University of Pittsburgh School of Medicine, USA
Short Talk: Defining the Role of CD8 T Cell Subsets in Tuberculosis Non-Human Primates
Valdir C. Barth, Boston Children's Hospital, USA
Short Talk: Mycobacterium tuberculosis VapC4 Toxin Engages Small ORFs to Initiate an Integrated Oxidative and Copper Stress Response

FRIDAY, DECEMBER 4

Rethinking Risk in TB (8am Denver/Mountain Time Start)
Neel R. Gandhi, Emory University, USA
Transmission is Driving the TB Epidemic, but Where Is the Majority of Transmission Occurring?
* Julio Croda, Oswaldo Cruz Foundation / Federal University of Mato Grosso do Sul / Yale School, Brazil
Tuberculosis in Prisons: Spillover and Impact in the Community
Padmini Salgame, Rutgers University, USA
Mt Transmissibility and Tissue Response
Kyu Y. Rhee, Weil Cornell Medical College, USA
A Focus on Bacterial Factors
* Sara Suliman, University of California, San Francisco, USA
Short Talk: Integration of Genetic and Transcriptional Profiles of Innate Cells to Decipher Mechanisms of TB Susceptibility
Betânia M.F. Nogueira, Universidade Federal da Bahia, Brazil
Short Talk: The Effect of Dysglycemia on Mycobacterium Tuberculosis Transmission to Close Contacts of Persons with Pulmonary Tuberculosis

Paul J. Converse, Johns Hopkins University, USA
Short Talk: The Next-Generation Diarylquinoline TBAJ-587 has Superior Efficacy Against, and Restricts Selection of, Bedaquiline-Resistant Rv0678 Mutants in a Mouse Model of Tuberculosis
Nittu Singh, CSIR-IMTECH, India
Short Talk: MtbEis Mediated Acetylation of RelMtb Regulates Stringent Response in Mycobacterium tuberculosis
Damian C. Ekiert, New York University School of Medicine, USA
Short Talk: CryoEM Structure of an Mce/YrbE ABC Transporter Complex Sheds Light on Hydrophobic Transport across the Envelope

Closing Keynote Address (5:45pm Denver/Mountain Time Start)
David Alland, Rutgers University, New Jersey Medical School, USA
Turning Discoveries into Useful Tools

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