



2nd International Virtual Conference on  
**Frontiers in TB &  
Mycobacteriology**

March 2–3, 2026 | Virtual  
Eastern Time (USA)

Chair

**Prof. Sanjib Bhakta**, PhD, DPhil (Oxford)

Institute of Structural and Molecular Biology  
UCL & Birkbeck, University of London  
United Kingdom

08:00–08:10 Welcome & Introduction to II Frontiers in TB & Mycobacteriology - by Sanjib Bhakta, Institute of Structural and Molecular Biology UCL & Birkbeck University of London

**Session I: Drug Resistance Mechanisms and Antibiotic Discovery**

Session Chair: **Sanjib Bhakta**, Institute of Structural and Molecular Biology UCL & Birkbeck University of London, United Kingdom

08:10–08:40



**Anil Koul**, PhD

*London School of Hygiene and Tropical Medicine, London, United Kingdom*

Discovery of New Antibiotic – JNJ6640 – for TB Treatment: Next Generation beyond Bedaquiline

08:40–09:10



**Kyle Rohde**, PhD

*University of Central Florida, FL, USA*

Halogenated Phenazines Kill Replicating and Dormant Mycobacteria via a Complex Mechanism that Thwarts Resistance Emergence

09:10–09:40



**Hedia Marrakchi**, PhD

*CNRS - University of Toulouse, France*

Exploring Old Scaffolds for Enhancing the Discovery of Novel Antituberculosis Molecules

09:40–09:50 Break

Session Chair: **Inna Krieger**, Texas A&M University, USA

09:50–10:20



**Anthony Baughn**, PhD

*University of Minnesota, MN, USA*

Repurposing an Antiviral Nucleotide Analog for TB Drug Discovery

10:20–10:50



**Joel S. Freundlich**, PhD

*Rutgers University, NJ, USA*

Recent Advances with *M. tuberculosis* KasA Inhibitors

10:50–11:20



**Dirk Lamprecht**, PhD

*H3D, University of Cape Town, South Africa*

Targeting de novo Purine Biosynthesis as a Therapeutic Strategy for Tuberculosis

11:20–11:30 Break

## Session II: Drug Resistance Mechanisms and Antibiotic Discovery – (ECR's)

Session Chair: **Nupur Angrish**, Birkbeck, University of London, United Kingdom

**11:30–11:35** **Henrich Gasparovic**, *Centre National De La Recherche Scientifique (CNRS), France*  
Heptaprenyl Reductase HepR Regulates Complex Stress Adaptations in *Mycobacterium abscessus*

**11:35–11:40** **Puja Kumari Agnivesh**, *NIPER, Hyderabad, India*  
Investigating the Interplay Between Mmp13 Mediated Transport Disruption and ATP Synthase Inhibition in *Mycobacterium tuberculosis* Survival

**11:40–11:45** **Anna G Green**, *University of Massachusetts, Amherst, MA, USA*  
A Frameshift Mutation in the Methyltransferase rlmN is Associated with Increased Linezolid Resistance in *Mycobacterium tuberculosis*

**11:45–11:50** **Michael Ofori**, *Dr. Hilla Limann Technical University, Ghana*  
Betulin, A Compound Isolated from *Crinum asiaticum* Bulbs Exerted Anti-Effective, Resistance Modulatory and Pulmonoprotective Effects

**11:50–11:55** **Haftay Abraha Tadesse**, *Mekelle University, Ethiopia*  
Inhibitor Activity and Resistance Mechanism of Compound BTD7 Against *Mycobacterium tuberculosis*

11:55– 12:10 ECR Speakers Panel: Q&A

12:10–12:40 Break

## Session III: Vaccines, Immunity and Biomarkers

Session Chair: **Bavesh Davandra Kana**, University of the Witwatersrand, South Africa

**12:40–13:10**



**Bavesh Davandra Kana**, PhD  
*University of the Witwatersrand, South Africa*  
Harnessing Peptidoglycan Amidation to Engineer a Better TB Vaccine

**13:10–13:40**



**Esther Julian Gomez**, PhD  
*Autonomous University of Barcelona, Spain*  
Exploring Structural Drivers of Immune Modulation in Mycobacteria-Based Immunotherapy

**13:40–14:10**



**Hazel Dockrell**, PhD  
*London School of Hygiene and Tropical Medicine, United Kingdom*  
Human Biomarkers as Correlates of Protection in TB Vaccine Trials



14:10–14:40

**Stephen Carpenter, MD, PhD**

*Case Western Reserve University, OH, USA*

Specificity and Diversity of Human CD4+ T cell Responses to Macrophages Infected with *Mycobacterium tuberculosis*



14:40–15:10

**Bernadette Saunders, PhD**

*University of Technology Sydney, Australia*

Comparing Prognostic Biomarkers for Tuberculosis Diagnosis and Treatment Response

15:10–15:30 Break

**Session IV: Novel Diagnostics and Therapeutic Strategies and Genomic Surveillance- (ECR's)**

Session Chair: **Anna Green**, University of Massachusetts Amherst, USA

15:30–15:35 **Pradip Malik**, CSIR, Central Drug Research Institute, India

In Vitro and In Vivo Synergy of Vancomycin and  $\beta$ -Lactams against Drug-Resistant *Mycobacterium tuberculosis* and Non-tuberculous Mycobacteria

15:35–15:40 **Anthony Vocat**, Lausanne University Hospital (CHUV), Switzerland

Novel Mycobacteriophages As A Promising Adjunct in the Fight against Drug-Resistant TB and NTM Infections

15:40–15:45 **Ontefetse Neo Plaatjie**, North West University, South Africa

LC-MS Metabolomics of Cerebrospinal Fluid in Paediatric Tuberculous Meningitis

15:45–15:50 **Agumas Shibabaw Tiruye**, Wollo University, Ethiopia

Whole Genome Sequencing-Based Drug Resistant Genes Mutation Markers of Multi-drug Resistant *Mycobacterium tuberculosis* in Ethiopia

15:50–16:05 ECR Speakers Panel: Q&A

16:05–16:35 **Session V: ECR Forum: Careers and Networking Session**

16:35 Day 1 Concluding Remarks

08:00–08:10 Opening Remarks

## Session VI: Host-Pathogen Mechanisms

Session Chair: **Hedia Marrakchi**, CNRS – University of Toulouse, France

08:10–08:40



**Zhang Tianyu**, PhD  
*Guangzhou Laboratory, China*

Research Progress on the Synergistic Lethal Mechanism of Mycobacteria

08:40–09:10



**Celine Cougoule**, PhD  
*French National Centre for Scientific Research, France*

Innovative Human Systems for Mycobacteria Infection Modelling and Drug Testing

09:10–09:40



**Lucas Boeck**, MD  
*University of Basel, Switzerland*

Determinants and Consequences of Antibiotic Killing in Mycobacteria

09:40–10:10



**Adrie Steyn**, PhD  
*Africa Health Research Institute, South Africa*

One Infection, Many Outcomes: Host- Pathogen Interactions across Human TB Lesions

10:10–10:20 Break

Session Chair: **Ankita Nag**, Birkbeck, University of London, United Kingdom

10:20–10:50



**Amy Barczak**, MD  
*The Ragon Institute of Mass General Brigham, MIT, and Harvard, Cambridge, MA, USA*

Mtb Containment or Escape: A Dynamic Battle at the Phagosomal Membrane

10:50–11:20



**Pere Joan Cardona Iglesias**, MD  
*Germans Trias i Pujol University Hospital, Universitat Autònoma de Barcelona, Spain*

Coevolutionary Arms Race between Drosophila and Mycobacterium: Insights into the Impact of Host-directed Therapies



11:20–11:50

**Howard Takiff**, MD, MPH

*Venezuelan Institute for Scientific Research, Venezuela*

*M. tuberculosis* ESX-3 and pe-pgrs Genes Increase *M. smegmatis* Iron Content and Survival in Macrophages

11:50–12:20



**Smriti Mehra**, PhD

*Texas Biomedical Research Institute, TX, USA*

Investigating the role of Indoleamine Dioxygenase in Modulating Immune Responses to *Mycobacterium tuberculosis* to Host and Pathogen Heterogeneity in Tuberculosis

12:20–12:30 Break

**Session VII: TB-HIV Co-Infection & Precision Epidemiology**

Session Chair: **Styliani Karanika**, Johns Hopkins School of Medicine Faculty, USA

12:30–13:00



**Deepak Kaushal**, PhD

*Texas Biomedical Research Institute, TX, USA*

Concurrent TB and HIV Therapies Control TB Reactivation during Co-infection but not Chronic Immune Activation – Implications for the Development of Host-Directed Therapies for the *Mtb*/HIV Co-infected

13:00–13:30



**Richard Anthony**, PhD

*National Institute for Public Health and the Environment, Netherlands*

Precision Epidemiology: Understanding the Epidemiology of Clustered Cases of Tuberculosis using Whole Genome Sequencing Lots of Information and Some Noise

13:30–14:00



**Johannes Nemeth**, PD, Dr. med. Univ.

*University Hospital Zuerich, Switzerland*

Novel Insights into TB-HIV Interaction

14:00–14:10 Break

**Session VIII: Host-Directed Therapies and Model Systems for TB & Molecular Pathogenesis and Host-Microbe Interactions – (ECR's)**

Session Chair: **Leopold D. Tientcheu**, LSHTM, United Kingdom

14:10–14:15 **Leopold D. Tientcheu**, LSHTM, United Kingdom

Host and Pathogen Diversity Influence the Efficacy of Tyrosine Kinase Inhibitor– Based Host-Directed Therapies in Tuberculosis

14:15–14:20 **Marlon Heggdorne de Araujo**, University of Padova, Italy

In Vitro and In Vivo Antimycobacterial Activity of Podocarpusflavone A

**14:20–14:25** **Andrew Benya French**, *Kwame Nkrumah University of Science and Technology, Ghana*

Repurposing Atorvastatin and Simvastatin as Antimicrobials in the Fight Against Antimicrobial Resistance: A Preclinical Study with High-Throughput Methods

**14:25–14:30** **Greta Segafreddo**, *University of Padova, Italy*

Molecular Mechanisms of Copper-Responsive Sigma Factor C Regulation in *Mycobacterium tuberculosis*

**14:30–14:35** **Guanchao Ding**, *University of Maryland, MD, USA*

Characterization of the Activation of Programmed Cell Death Pathways In Macrophages After *Mycobacterium tuberculosis* Infection

**14:35–14:40** **Theophilus Kwesi Ninkyi**, *Kwame Nkrumah University of Science and Technology, Ghana*

In Vitro and In Vivo Evaluation of Ethanolic Bulb-Extract of *Allium cepa* Pink on *Mycobacterium aurum*

**14:40–14:45** **Styliani Karanika**, *Johns Hopkins University, MD, USA*

CCRL2 Deficiency Enhances Resistance to *Mycobacterium tuberculosis* Infection Likely through Selective Elimination of Pathogen-Permissive Myeloid Cells

**14:45–15:00** ECR Speakers Panel: Q&A

**15:00** Conference Closing Remarks