



UNITED Scientific
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STAPH-2023

2nd Virtual Conference on

STAPHYLOCOCCAL INFECTIONS

February 27-28, 2023

Time zone: Eastern Time (US & Canada)

Email: staph@microbioconference.com

Web: <https://unitedscientificgroup.com/conferences/staph/>

09:00 – 09:10 Welcome & Introduction to **STAPH-2023**

Conference Chair: **Friedrich Götz**, University of Tübingen, Germany

Session I - Pathogenesis

Chair: **Michelle Callegan**, University of Oklahoma Health Sciences Center, OK, USA

09:10 – 09:35 Contribution of a Highly Multiplexed Proteomic Method to Decipher Staphylococcal Pathogenesis

Francois Vandenesch, University of Lyon Medical School, France

09:35 – 10:00 Finding the Perfect Match: Improving Murine Colonization Models by Using Mouse-Adapted *Staphylococcus aureus* Strains

Silva Holtfreter, Greifswald Medical School, Germany

10:00 – 10:25 Persistent Bone Infections

Lorena Tuscherr de Hauschopp, Jena University Hospital, Germany

10:25 – 10:35 Short Break

10:35 – 11:00 Host Metabolites Impact the Pathogenesis of *S. aureus* Pneumonia

Alice Prince, Columbia University, NY, USA

11:00 – 11:25 Uncovering the Executioner, Influenza and *S. aureus* Secondary Bacterial Pneumonia

Timothy Borgogna, Montana State University, MT, USA

11:25 – 11:50 *S. aureus* Infections in Children: Host and Pathogen Contributions at the Infection Interface

Kristin Moffitt, Harvard Medical School, MA, USA

11:50 – 12:00 Short Break

Session II – Physiology, Ecology, Adaptation

Chair: **Kerry LaPlante**, University of Rhode Island, RI, USA

12:00 – 12:25 The *Staphylococcus aureus* Type VII Secretion System and Interbacterial Competition

Tracy Palmer, Newcastle University, United Kingdom

12:25 – 12:50 Customizing *Staphylococcus aureus* Membrane Phospholipids from the Outside: Effects on Bacterial Physiology and Antibiotic Evasion

Alexandra Gruss, Micalis Institute, France

12:50 – 13:15 Copper Ions and the *Staphylococcus aureus* Host Interface

Jeffrey M. Boyd, Rutgers University, NJ, USA

13:15 – 13:40 *Staphylococcus aureus* Membrane Vesicles: A Novel Secretory System with Virulence Potential

Jean C. Lee, Harvard Medical School, MA, USA

13:40 – 13:50 Short Break

Chair: **Martie Vicent**, University of Rhode Island, RI, USA

13:50 – 14:15 Bicarbonate Sensitization of MRSA to B-Lactams

Arnold S. Bayer, The Lundquist Institute, CA, USA

14:15 – 14:40 Spatial Regulation of Surface Proteins in *Staphylococcus aureus*
Wenqi Yu, University of South Florida, FL, USA

14:40 – 15:05 Multifaceted Role of Metabolism in *Staphylococcus aureus* Pathogenesis
Dane Parker, Rutgers New Jersey Medical School, NJ, USA

15:05 – 15:15 Short Break

Session III – Penicillin-binding Proteins (PBPs)

Chair: Erin Murphy, Ohio University, OH, USA

15:15 – 15:40 Role of PBP4 in Mediating Antibiotic Resistance and Pathogenesis of *Staphylococcus aureus*

Som S. Chatterjee, University of Maryland, MD, USA

15:40 – 16:05 Interrogating the Promise of *Staphylococcus aureus* PBP4 as a Therapeutic Target
Paul M. Dunman, University of Rochester, NY, USA

16:05 – 16:15 Day 1 Concluding Remarks

09:00 – 09:10 Day 2 Opening Remarks

Session IV – Regulation

Chair: **Birgit Strommenger**, Robert Koch Institute, Germany

09:10 – 09:35 Small Regulatory RNAs in *S. aureus*: Key Partners to Host Adaptation, Iron-Sparing Response and Virulence

Philippe Bouloc, University of Paris-Saclay, France

09:35 – 10:00 Role of (p)ppGpp in Antibiotic Resistance, Tolerance, Persistence and Survival in *Staphylococcus aureus* and Other Firmicutes

Christiane Wolz, University of Tübingen, Germany

10:00 – 10:25 SarA and Protease-Mediated Post-Translational Regulation as a Promising Anti-Virulence Target in *Staphylococcus aureus* Osteomyelitis

Mara Campbell, University of Arkansas for Medical Sciences, AR, USA

10:25 – 10:35 Short Break

Session V – Antibiotic Treatment, Resistance, Target, and Side Effects

Chair: **Anjali Abhay Satoskar**, Ohio State University, OH, USA

10:35 – 11:00 Eliminating *S. aureus* and MRSA by Photobleaching its Golden Pigment

Ji-Xin Cheng, Boston University, MA, USA

11:00 – 11:25 The Role of the PBPs in Life and Death: New Clues to a Still Unsolved Mystery

Camilla Henriksen, University of Copenhagen, Denmark

11:25 – 11:50 Evolutionary History of *S. aureus* Primes Antibiotic Resistance Evolution

Anaëlle Fait, ETH Zürich, Switzerland

11:50 – 12:15 A Developmental Niche for Vancomycin-Intermediate *Staphylococcus aureus*

Michael Olson, SIU School of Medicine Springfield, IL, USA

12:15 – 12:40 Understanding Vancomycin Nephrotoxicity Augmented by Beta-Lactams: A Synthesis of Endosymbiosis, Proximal Renal Tubule Mitochondrial Metabolism and Beta-Lactam Chemistry

George Sakoulas, University of California San Diego, CA, USA

12:40 – 12:50 Effect and Mechanism of Eliminating *S. aureus* by Electron Beam Irradiation and Reducing the Toxicity of its Metabolites

Guanhong Chang, Northwest A&F University, China - **Flash Talk**

12:50 – 13:00 Short Break

Session VI – Immune System Interaction

Chair: **Balazs Rada**, University of Georgia, GA, USA

13:00 – 13:25 Crosstalk Between *Staphylococcus aureus* Biofilm and Innate Immunity Influences Infection Persistence

Tammy Kielian, University of Nebraska Medical Center, NE, USA

- 13:25 – 13:50 Immunity to *Staphylococcus aureus* Skin Infections: New Insights Into the Role of Neutrophils
Nathan K. Archer, Johns Hopkins School of Medicine, MD, USA
- 13:50 – 14:15 Mechanisms of Staphylococcal Interference with IsdB Vaccine
George Liu, University of California San Diego, CA, USA
- 14:15 – 14:40 Inflammasome Activation Induces Antibiotic Tolerance in *S. aureus* in the Macrophage Cytosol
Brian Conlon, The University of North Carolina, NC, USA
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- 14:40 – 14:50 Vote of Thanks and End of the Conference**



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