

## Fall 2021 KY-TN ASM Branch Meeting

Hosted (via Zoom) by the

Dept. of Microbiology, Immunology & Molecular Genetics, University of Kentucky College of Medicine  
Sarah E.F. D’Orazio, Ph.D. and Erin C. Garcia, Ph.D., Co-Organizers

### Friday, Nov. 5<sup>th</sup>

6:00 – 6:15 PM

#### **Opening remarks**

Welcome (*Co-host Erin Garcia*)

Introduction of Keynote Speaker (*Co-Host Sarah D’Orazio*)

6:15 – 7:15 PM

#### **ASM Distinguished Lecturer Keynote Seminar**

**Kimberlee Musser, Ph.D.**, Wadsworth Center NY State Dept. of Health, Albany NY  
Inside a Legionnaire’s disease outbreak investigation

7:15 – 8:00 PM

#### **Graduate Student “3 Minute Thesis Competition”**

Jennifer A. Baily (UT-K), Amanda Brady (UL), Ryan Donkin (EKU), Zaria Elery (UK),  
Frank May (UT-K), Rebecca Moore (VU), Sabrina Spicer (VU), Jamila Tucker (UK),  
Jill Walton (UT-K)

8:00 – 9:00 PM

#### **Social hour/Networking**

### Saturday, Nov. 6<sup>th</sup>

9:00 AM - 10:30 AM

#### **SESSION #1: Microbial Pathogens**

9:00 AM

**Welcome/Announcements** (*Co-hosts Erin Garcia/Sarah D’Orazio*)

9:05 AM

*Invited Speaker: Natalia Korotkova, Ph.D.*, University of Kentucky  
Cell wall decorations guide cell division in *Streptococcus mutans*

9:35 AM

*Selected Abstract: Caleb Fisher, Ph.D.*, Georgetown College  
*In vitro* antibiotic activity against *Acinetobacter* revealed by a human serum-based growth assay

9:50 AM

*Invited Speaker: Elaine Frawley, Ph.D.*, Rhodes College  
Disrupted metal homeostasis and the importance of manganese in the *Salmonella* nitric oxide response

10:20 AM

*Selected Abstract: Christopher Lennon, Ph.D.*, Murray State University  
Reactive chlorine species reversibly inhibit DnaB protein splicing in mycobacteria

10:35 – 10:45 AM

#### **COFFEE BREAK**

10:45 AM – 12:00 PM

#### **SESSION #2: Microbiomes and Microbial Diversity**

10:45 AM

*Invited Speaker: Benjamin Parker, Ph.D.*, University of Tennessee-Knoxville  
Heritable microbial symbionts in aphids: immunity, genetic variation, and coevolution

11:15 AM

*Invited Speaker: Ashfaquul Alam, Ph.D.*, University of Kentucky  
Interactions between gut microbiota and hosts and their role in intestinal infections and diseases

- 11:45 AM *Selected Abstract: **Brian Alejandro, M.S.**, University of Louisville*  
The landscape of the genetic heterogeneity within the infectious population of RNA virus
- 12:00 – 1:00 PM **LUNCH BREAK**
- 1:00 – 1:05 PM Introduction of Keynote Speaker (*Co-Host Erin Garcia*)
- 1:05 – 2:05 PM **ASM Distinguished Lecturer Keynote Seminar**  
**Kristin N. Parent, Ph.D.**, Michigan State University  
Structure and function of *Shigella* phages: from a neighborhood near you
- 2:05 – 2:30 PM **Undergraduate student “3 Minute Thesis Competition”**  
Sahil Chhabra (WKU), Hannah Edwards (UT-K), Carissa Elonen (UT-K), Mahip Kalra (VU),  
Gabrielle Shipstone (ETS)
- 2:30 – 2:35 PM **Hayley Sandusky**, University of Tennessee Southern  
Undergraduate Student Travel Award winner, Spring 2021  
Brief report from the 2021 Microbe World Forum
- 2:35 – 2:50 PM **COFFEE BREAK**
- 2:50 PM – 4:05 PM **SESSION #3: Environmental Microbiology**
- 2:50 PM *Invited Speaker: **Natalie Christian, Ph.D.**, University of Louisville*  
A dominant endophyte affects microbial colonization and disease by changing plant secondary chemistry
- 3:20 PM *Invited Speaker: **Shawn Brown, Ph.D.**, University of Memphis*  
The hidden world of snow microbes: late season snows house taxonomically diverse but functionally unresolved microbial communities
- 3:50 PM *Selected Abstract: **Timothy Saylor**, University of Kentucky*  
Deciphering binding affinities of the *Borrelia burgdorferi* SpoVG protein
- 4:05 – 4:15 PM **ANNOUNCEMENT OF STUDENT PRIZES**  
(*Sarah D’Orazio*): Undergraduate: 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> place  
(*Erik Peterson*): Graduate student: 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> place
- 4:15 PM **BUSINESS MEETING, KY-TN ASM Branch**  
Dr. Jennifer Gaddy (Vanderbilt), President/Councilor  
Dr. Korsi Dumenyo (Tenn State), President Elect  
Dr. David Beck (Tenn Tech), Secretary  
Dr. Erik Petersen (East TN State), Treasurer  
Dr. Rodney King (WKU), Alternate Councilor
- Updates from the presidents of ASM Student Chapters:  
UK: Jamila Tucker  
Vanderbilt: Anne Hatmaker

## Graduate Student 3-Minute Thesis Presentations

**Jennifer A. Baily** (University of Tennessee-Knoxville)

Characterization of the potentially syntrophic relationship between methylotrophs and aerobic methanotrophs in aquatic environments

**Amanda Brady** (University of Louisville)

*Yersinia pestis* inhibits host synthesis of Leukotriene B<sub>4</sub>, a potent mediator of inflammation

**Ryan Donkin** (Eastern Kentucky University)

The Effects of the Estrus Cycle on Microbiota Composition and the Opportunistic Pathogen *Listeria monocytogenes* Infection Process in Murine Models

**Zaria Elery** (University of Kentucky)

Accessory to murder: Characterizing the role of an accessory protein in the CDI systems of *Burkholderia* species

**Frank May** (University of Tennessee-Knoxville)

Mobile genetic elements drive bacterial-algal interactions

**Rebecca Moore** (Vanderbilt)

Sweeter than sugar

**Sabrina Spicer** (Vanderbilt)

Pour some sugar on me: Investigations Into the Utility of Human Milk Oligosaccharides

**Jamila Tucker** (University of Kentucky)

"What's the niche?" Understanding the Systemic Spread of *L. monocytogenes* After Foodborne Infection

**Jill Walton** (University of Tennessee-Knoxville)

Work smarter, not harder: Harnessing bacteria for intrinsic bioremediation

## Undergraduate Student 3-Minute Thesis Presentations

**Sahil Chhabra** (Western Kentucky University)

Mutant Creation of Bacteriophage Moomoo using Bacteriophage Recombineering with Electroporated DNA

**Hannah Edwards** (University of Tennessee-Knoxville)

Plasmid Stability within *Sulfitobacter* Strains CB-D and CB-A

**Carissa Elonen** (University of Tennessee-Knoxville)

Oxtrase as a *H. meleagridis* growth efficiency enhancer in media

**Mahip Kalra** (Vanderbilt)

The Genetic Basis of Bacterial Mediated Embryonic Lethality

**Gabrielle Shipstone** (Eastern Tennessee State)

Cyclic-Di-GMP's Role in the Desiccation Survival of *Acinetobacter baumannii* 5075