



Texas  **Branch**

American Society for Microbiology

Program

2019 Fall Meeting

November 7 - 9, 2019

Hosted by The University of Texas at San Antonio (UTSA)

501 W. César E. Chávez Blvd.

San Antonio, TX 78207



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Meeting Sponsor



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Meeting Sponsors

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Meeting Venue

Durango Building

**The University of Texas at San Antonio Downtown Campus
(UTSA)**

501 W. César E. Chávez Blvd.
San Antonio, TX 78207



Directions to Meeting Venue: If you click or copy the following address it should take you to UTSA Downtown Campus- Durango Building
501 W. César E. Chávez Blvd.
San Antonio, TX 78207

Meeting Venue - Durango Building (DB); Event Parking at Lot D3



- | | |
|---------------------------|---|
| COMMUTER C PARKING | MOTORCYCLE PARKING |
| RESIDENT H PARKING | HOURLY PARKING PAY STATION |
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| EMPLOYEE A PARKING | VIA BUS STOP |
| EMPLOYEE B PARKING | GARAGES |
| SHORT-TERM HOURLY PARKING | <i>(Garage Permit, Short-Term, & Disabled Parking Only)</i> |

Accommodation



Location: Right in Front of the Meeting Venue Durango Building UT- San Antonio Downtown Campus

We have arranged a preferred rate (\$126/Night) for accommodation at:

[Doubletree by Hilton San Antonio Downtown](#)

502 W Cesar E Chavez Blvd, San Antonio, Texas 78207

Phone: 210-224-7155 /210-388-0332

Banquet and Awards Ceremony Venue

Meeting Venue – Durango Building, UT-San Antonio Down Town Campus

The Friday (Nov. 8th) banquet and awards ceremony will take place in the Durango Building at UTSA Downtown Campus from 6PM to 8PM.

The famous San Antonio Riverwalk and Market Square is one block away from the Downtown Campus

Wi-Fi Access

The UTSA AirRowdy Guest network allows campus visitors to check a box accepting the terms of use and click on Login and done which should allow you to access the internet For further assistance, contact the IT Help Desk at (210) 458-5555 or oitconnect@utsa.edu

All lectures and talks require PC-friendly version of presentation for best possible projection and IT support.

Distinguished Speakers

ASM Distinguished Lecturer

Dr. Bettina Fries, MD, PhD, FIDSA

Chief, Division of Infectious Diseases

Professor of Medicine

Department of Medicine

Department of Molecular Genetics and Microbiology

Stony Brook University HSC Level 17 Room 060 Stony Brook, NY
11794-8153

Phone: 631-638-7948 E-mail: Bettina.Fries@stonybrookmedicine.edu

Keynote Speaker

Dr. Scott C. Weaver, MS, PhD,

John Sealy Distinguished University Chair in Human Infections
and Immunity,

John S. Dunn Distinguished Chair in Biodefense

Chair, Department of Microbiology & Immunology

Director, [Institute for Human Infections & Immunity](#)

Scientific Director, Galveston National Laboratory

Professor, Microbiology & Immunology and Pathology

The University of Texas Medical Branch, Galveston, TX

Phone: (409) 266-6500

Mail Route: 0610

Office: Galveston National Laboratory (GNL) 6.200D

Email: sweaver@utmb.edu

ASM Distinguished Lecturer: Dr. Bettina Fries, MD, PhD, FIDSA



Chief, Division of Infectious Diseases
Professor of Medicine
Department of Medicine
Department of Molecular Genetics and Microbiology
Stony Brook University HSC Level 17 Room 060 Stony Brook, NY 11794-8153

Phone: 631-638-7948 E-mail: Bettina.Fries@stonybrookmedicine.edu

Talk Title: “Hope and Challenges for Antibodies in Infectious Diseases”

Objectives:

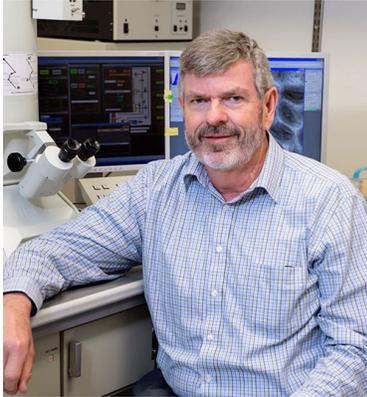
1. Understand why we need new therapeutic modalities to treat multi-drug resistant bacteria
2. Understand basic aspects about antibodies and what role they play when these biologics are used as drugs in humans
3. Understand the challenges one faces when developing antibodies for treatment of infectious diseases

BIOGRAPHICAL SKETCH: Dr. Fries is Professor of Medicine and Molecular Genetics and Microbiology and chief of the Infectious Disease Division at Stony Brook University. She is an ASM member, a Fellow of the Infectious Disease Society of America, and served as a standing member on the NIH study section for AIDS-Associated Opportunistic Infections and Cancer. She has received continuous extramural grant support, including from the National Institutes of Health. The focus of her research is in two areas: the pathogenesis of chronic infection by the fungal pathogen, *Cryptococcus neoformans*; and the development of anti-infective antibodies. She has contributed new knowledge and advanced our understanding of the host response to

chronic *C. neoformans* infection and the molecular mechanisms that allow the fungus to change based on the host response. She has also developed neutralizing antibodies against *Staphylococcal enterotoxin B* and *K* (SEB, SEK) and antibodies that bind the polysaccharide capsule of carbapenem resistant *Klebsiella* strains, including those with a hypermucoid capsule type. She has published over 85 original scientific manuscripts and review articles, along with several book chapters. She is actively engaged in teaching students, residents, and fellows and is a regularly invited meeting organizer and speaker at national and international conferences.

LECTURER'S PERSONAL STATEMENT: I am a physician scientist appointed in microbiology and medicine. I wrote papers, hold grants with experimental physicists, and have developed a passion for cross-disciplinary teaching. As a residency director, I founded a journal club that brought MD-Ph.D. students and residents together to discuss basic science papers that have impact on clinical outcomes. As a division chief I have integrated my Ph.D. students and postdoctoral fellows into ID grand rounds and ID journal club, where they learn about clinical challenges and teach progress in basic science. Together with the head of microbiology, I teach a translational pillar for medical students on basic science of urinary tract infections. I have developed and taught a 3-week intensive summer course on emerging infections for undergraduate students at the University of Freiburg. That course also included skype interviews with economists and lawyers working in Global Health. I have been an ASM member since 1999 and consistently attend ASM meetings. I helped organize the ASM sponsored 8th International Conference on Cryptococcosis in Amsterdam. I publish in ASM journals and serve as reviewer. I am an active member in the ASM community and serve as councilor of the Medical Mycology Society of the Americas. I chair their award committee that selects the best graduate student abstract. I also serve in multiple roles at the annual IDSA meetings and on their awards and research committees and I serve as the President of the New York ID Society.

Keynote Speaker:



Dr. Scott C. Weaver, MS, PhD.,

John Sealy Distinguished University Chair in Human Infections and Immunity

John S. Dunn Distinguished Chair in Biodefense

Chair, Department of Microbiology & Immunology

Director, [Institute for Human Infections & Immunity](#)

Scientific Director, Galveston National Laboratory

Professor, Microbiology & Immunology and Pathology

Dr. Weaver's research focuses on the ecology, evolution, epidemiology and pathogenesis of arboviral diseases, arbovirus-mosquito vector interactions, and vaccine development for arboviral disease prevention. Current projects include emergence mechanisms, pathogenesis and vector transmission of Zika and chikungunya viruses. His lab is also developing a newly discovered mosquito-specific alphavirus, Eilat virus, as a vaccine and diagnostic antigen platform, as well as developing vesiculoviruses as new vaccine vectors. He also leads the CDC-funded [Western Gulf Center of Excellence in Vector-borne Diseases](#), involving eight academic and multiple public health institutions in Texas, and the [World Reference Center for Emerging Viruses and Arboviruses](#).

Talk Title – “Urban Arboviruses: Evolution and Mechanisms of Emergence”



Texas Branch

American Society for Microbiology

Detailed Schedule November 7 - 9, 2019

Thursday, November 7th

- 12:00 - 4:00pm **Check-in: Doubletree by Hilton San Antonio Downtown. Meeting venue is right across the hotel.**
- 5:00 - 7:00pm **Registration at Durango Building: The University of Texas at San Antonio Downtown Campus (UTSA); 501 W. Cesar E. Chavez Blvd, San Antonio, TX-78207**
- 6:00 - 7:00pm **Poster Setup – Riverwalk Room; Durango Building**
- 6:00 - 7:00pm **Reception: La Villita Room and in adjoining hallways**
- 7:00 - 7:05pm **Welcome: Dr. Janakiram Seshu (Professor, UTSA)- La Villita Room**
- 7.05 - 7.10pm **Brief remarks and Introduction of Keynote Speaker - Dr. Madhusudan Choudhary; President, Texas ASM Branch; Associate Professor, SHSU**
- 7:15 - 8:15pm **Keynote address: Dr. Scott C. Weaver, MS, Ph.D.,
John Sealy Distinguished University Chair in Human Infections and Immunity
Title: “Urban Arboviruses: Evolution and Mechanisms of Emergence”**
- Phage therapy for treating MDR bacterial infections: A 100-year development cycle**
- 8:30 - 9:30pm **Open business meeting: Alamo Board Room**

Friday, November 8th

- 7:30 - 8:00am **Vendor setup - El Paseo B – Durango Building.**
- 7:30 - 8:30am **Breakfast- Durango Building Hallway**
- 8.00 - 12:00pm **Registration remains open at Durango Building**
- 8:00 - 12:00pm **Poster Setup - Riverwalk Room – Durango Building.**
- 8:45 - 8.55am **Welcome/Introduction by Dr. Janakiram Seshu (Professor, UTSA) - La Villita Room**
- 9.00 - 10.00am **ASM Distinguished Lecture –Dr. Bettina Fries, MD, PhD, FIDSA Chief, Division of Infectious Diseases Professor of Medicine, Stony Brook University**
- Title: “Hope and Challenges for Antibodies in Infectious Diseases”**
- 10:15 - 12:40pm Graduate (G) and Undergraduate (UG) Student Scientific presentations (20 min each) in 3 concurrent sessions (Medical Microbiology, General Microbiology and a mixed-topic UG Student Research Session)
- Session A: Medical Microbiology – Graduate Student Presentations, Mercado Room**
- Session Chair: Dr. Nicole DeNisco, Assistant Professor, Department of Biological Sciences, The University of Texas at Dallas**
- 10:15 - 10:35am Jordyn Michalik-Provasek; Texas A&M University, College Station
Developing and Characterizing Bacteriophage for Therapeutic use against Carbapenem Resistant *Enterobacteriaceae*
- 10:35 - 10.55am Sandeep Vellanki – The University of Texas at San Antonio
A novel resistance mechanism to calcineurin inhibitors in *Mucor circinelloides*
- 10:55 - 11.15am Hillary Staples- Texas Biomedical Research Institute
Development of a well-characterized Rhesus Macaque model of Ebola virus disease for support of product development
- 11-15 - 11-35am Mylea A. Echazarreta -The University of Texas at San Antonio
Vibrio cholerae* interactions with the commensal fungus *Candida albicans
- 11:35 - 11.55am Donghoon Kang - Rice Univeristy
Model Pathosystems Identifies Novel Therapeutic Approaches against Multidrug-reisstant *Pseudomaonas aeruginosa*,

11:55 - 12:20 pm Yue Chen- The University of Texas at San Antonio
Borrelia –peptidoglycan interacting Protein (BpiP) contributes to the fitness of *Borrelia burgdorferi* against host-derived factors and influences virulence in mouse models of Lyme disease

12:20 - 12:40 Russel Ault, Texas Biomedical Research Institute
Blood RNA signatures predict recent tuberculosis exposure in mice macaques and humans

Session B: General Microbiology-Graduate Student Presentations, El Paseo A Room

**Session Chair: Dr. Karl Klose, Professor, Department of Biology
Institution: The University of Texas at San Antonio**

10:15 - 10:35am Luke R. Joyce, The University of Texas at Dallas
Phosphatidylcholine biosynthesis in Mitis group streptococci via host metabolite scavenging

10:35 - 10:55am Farah Shamma, The University of Texas at Dallas
PstP regulates Mycobacterial cell wall metabolism

10:55 - 11:15am Moamen M. Elmassry, Texas Tech University
New markers for sepsis caused by *Pseudomonas aeruginosa* during burn infection

11:15 - 11:35am MR Tirumalai, University of Houston
An unique insertion in the 5S ribosomal RNA of haloarchaea: a cryo-EM study

11:35 - 11:55 am Christian Peterson, The University of Texas at Arlington
The effect of a Texas Native Desiccation-tolerant Inoculant on Symbiotic Nitrogen Fixation Soybean Yield, and Rhizosphere Microbiomes

11:55 - 12:15 pm Megan M. Mullis, Texas A&M Corpus Christi
Come hell or highwater: Microbial community restoration post Hurricane Harvey

12:15 - 12:35 PM Zachary Allen Mays, Texas State University
Diversity of bacteria associated with wild and captive Comal Springs riffle beetles (*Heterelmis comalensis*)

Session C: Undergraduate Student Research Presentation - La Villita Room

Session Chair: Dr. Rishein Gupta, Assistant Professor of Research, Department of Biology, The University of Texas at San Antonio, Assistant Meeting Chair

10:15 - 10:35am Jessica O’Berry – The University of Texas at San Antonio; UT McGovern Medical School; Sponsored by Anna Konovalova, Ph.D., Department of Microbiology; Supported by The Gillson Longenbaugh Foundation

The Regulatory Map of Envelope Stress Responses

10:35 - 10:55am Cody Martin –Center for Phage Technology; Department of Biochemistry and Biophysics; Texas A&M University

Seventy years later: A new lysis inhibition system in coliphage N4

10:55 - 11: 20am Cameron Mutchler, Department of Biology, The University of Texas at San Antonio

The DNA Uptake Pilus Involvement in Type VI Secretion System-Dependent Killing of *Vibrio cholerae*

11:20 - 11:45am Emily K. DeCurtis, Department of Biological Sciences, The University of Texas at Dallas

Investigating the *in vitro* co-evolutionary interactions and adaptations of *Enterococcus faecalis* SF28073 and Bacteriophage VPE25

11.45 - 12.10 PM Keyanna Taylor- Baylor University

The Role of Environmental Surface Materials on Contamination and Eradication of Methicillin-Resistant *Staphylococcus aureus* (MRSA)

12.10-12: 30 PM Analisa Narro, Department of Biology, The University of Texas at San Antonio

Optimization of Protein Purification Process for a Diagnosis Antigen of *Coccidioides* Infection

12.30 - 1.30 pm	Boxed lunch: Durango Building, UTSA
12:30-2:30pm	Poster Session. Poster presenters will stand by their poster till judging is completed.
2:30- 2:55pm	<p>Session: Texas Branch ASM Millicent and Eugene Goldschmidt Graduate Award Lecture – Mercado Room</p> <p>Rachel E. Weisend- Ph.D. candidate, Marine Biology Texas A&M University - Corpus Christi</p> <p>Mangrove Ecosystems: Insight into Microbial and Geochemical Counterparts</p>
<p>Vendor tables will be in El Paseo Room B.</p>	
3:00 - 5:15pm	Scientific presentations in 3 concurrent sessions (Biology and Pathogenic Mechanisms of 1) Prokaryotes, 2) Eukaryotes and 3) Virology and Viral pathogenesis in the Durango Building.
	<p>Session A: Biology and Pathogenic Mechanisms of Prokaryotes - La Villita Room Session Co-Chairs: Dr. Kelli Palmer, Associate Professor, The University of Texas at Dallas; Dr. Natasha Kirienko, Assistant Professor, Department of Biosciences, Rice University.</p>
3:00 - 3:25pm	<p>Dr. Cara Boutte, Assistant Professor, The University of Texas at Arlington.</p> <p>The mycobacterial cell wall – a moving target</p>
3:25 - 3:50pm	<p>Dr. Joseph Boll, Assistant Professor, The University of Texas at Arlington.</p> <p>Solving a multidrug resistance puzzle: Complete Loss of lipoooligosaccharide</p>
3:50 - 4:15pm	<p>Dr. Carolyn Cannon, Associate Professor, Texas A&M University College of Medicine</p> <p>Silver bullets: Novel silver-based antimicrobials to treat multi-drug resistant pathogens</p>
4:15 - 4:40pm	<p>Dr. Nicole De Nisco, Assistant Professor, The University of Texas at Dallas.</p>

Microbial ecology of recurrent urinary tract infection

4:40 - 5.05pm Dr. Rick Laughlin, Assistant Professor, TAMU-Kingsville
**Nature and nurture: the role of the environment in *Salmonella*
Typhimurium cellular functions**

**Session B: Biology and Pathogenic Mechanisms of Eukaryotes
Mercado Room**

**Session Co-Chairs: Dr. ChiungYu Hung, Assistant Professor, The
University of Texas at San Antonio and Dr. Ian Cheeseman, Assistant
Professor, Texas Biomedical Research Institute.**

3:00 - 3:25 pm Dr. David Kadosh, Professor University of Texas Health Science Center,
San Antonio

Translational Control of Morphogenesis in *Candida albicans*

3:25 - 3:50pm Dr. Althea Campuzano, Postdoctoral fellow, Department of Biology, The
University of Texas at San Antonio

Vaccine Immunity in mice and humans against *Coccidioides* Infection

3:50 - 4:15pm Dr. Winka Le'clech, Staff Scientist, Texas Biomedical Research Institute

**The genetic basis of praziquantel resistance in *Schistosoma mansoni*
parasites**

4:15 - 4:40pm Dr. Ian Cheeseman, Assistant Professor, Host-Pathogen Interaction
Program, Texas Biomedical Research Institute

Single cell genomics of malaria parasites

Session C: Virology and Viral Pathogenesis

**Session Co-Chairs: Dr. Sasirekha Ramani, Assistant Professor, Baylor
College of Medicine; Dr. Jason Gill, Associate Professor, Agriculture
and Life Sciences, TAMU**

3:00 - 3:25pm Dr. Vineet Menachery, Assistant Professor; Department of Microbiology
& Immunology; UTMB

Bats to Humans: Finding pathways to coronavirus emergence

3:25 - 3:50pm Dr. Jason Gill, Associate Professor, Agriculture and Life Sciences, TAMU

The Defense Against Restriction System and Capsid Morphogenesis of Bacteriophage P1”.

3:50 - 4:15pm Dr. Shashank Ganatra, Staff Scientist, Texas Biomedical Research Institute

Can cART alone deliver in the race between immune reconstitution and TB reactivation in SIV/Mtb coinfection?

4:15 - 4:40pm Dr. Sasirekha Ramani, Assistant Professor, Baylor College of Medicine, Houston

Human Intestinal Organoids: Transformative New Tools for Studying Human Enteric Viruses

4:40 - 5:05pm Dr. Karthik Chamakura, Post-Doctoral Fellow, Department of Biochemistry and Biophysics, Texas A&M University, College Station

“Evolution and diversity in single gene lysis”.

5:15 - 6:00pm **Free Time.** (Take down posters, meet with a new colleague or an old friend.)

6:00 - 8:00pm **Banquet and Awards Ceremony – Riverwalk Room**

6:00 – 6:05pm **Welcome address by Dr. Robert McLean, Regents’ Professor, Department of Biology, Texas State University**

6:00-7:30pm **Banquet**

7:30: 8:00pm **Awards Presentation: Dr. Robert McLean, Regents’ Professor; Department of Biology, Texas State University and Dr. Madhusudan Choudhary; President, Texas ASM Branch; Associate Professor, SHSU**

8pm - **On your own – Riverwalk, Market Square, Alamo etc.**

Saturday, November 9th

8:00 – 9:00am **Breakfast** (whole fruit, granola, and coffee) available in the University Center foyer. Items will be available throughout the day.

- 8:00 – 9:00am **Registration** remains open at the Durango Building
- Two Concurrent sessions
- 9:00 - 11:00am Presentations in 2 concurrent sessions on A) STEM education and B) Environmental Microbiology and Microbial Ecology
- Session A: “STEM”ming Success in Microbial Sciences”– Mercado Room**
Session Co-Chairs: Dr. Lee Hughes, University of North Texas; Dr. Todd Primm, Sam Houston State University,
- 9:00- 9:30am Dr. Lee Hughes, The University of North Texas and Dr. Todd Primm, Sam Houston State University
The General and Health Sciences Concept Inventories for Microbiology”
- 9:30 – 10:00am Dr. Joni Ylostalo, University of Mary Hardin-Baylor, Waco
- Math/Logic concepts in the Microbiology Laboratory**
- 10:00 - 10:30am Dr. Jonathan Lawson, Baylor University, Waco
- Scaling inquiry-based learning in lab and lecture courses**
- 10:30 – 11:00am Dr. Shelley Howell Ed. D., Interim Vice Provost for Teaching and Learning, The University of Texas at San Antonio
- TBA**

- Session B: Environmental Microbiology and Microbial Ecology- La Villita Room**
Session Co Chairs: Dr. Vikram Kapoor, Assistant Professor, Department of Environmental and Civil Engineering, The University of Texas at San Antonio and Dr. Terry J. Gentry, Professor, Department of Crop and Soil Sciences
- 9:00 - 9:25am Dr. Camila Carlos-Shanley, Assistant Professor, Department of Biology Texas State University
- Eco-evolutionary dynamics in lignocellulose-degrading microbial communities**
- 9:25 – 9:50am. Jessica Hinojosa, University of Texas at San Antonio

Microbial Source Tracking using Bacteroidales 16S rRNA-based qPCR Assays for Fecal Pollution Evaluation in a Rural and Urban Creek within Aquifer Recharge and Contributing Zones

9:50 – 10:15am Dr. Kayleigh Millerick, Assistant Professor, Department of Civil, Environmental and Construction Engineering, Texas Tech University

Assessing the combined impact of shifting biogeochemical conditions and engineered media on the composition and behavior of PAH-enriched microbial communities

10:15-10:40am Mr. Mark McDonald, Texas A&M University – College Station

Microbial Assessment of Nitrous Oxide Producing Organisms in Texas Cotton Cropping Systems

10:40 - 11-05am Dr. Jeffrey W. Turner, Assistant Professor, Texas A&M University - Corpus Christi

Characterizing the microbial response to plastic and bioplastic debris in the marine environment

11:10am - 12:00pm **Micro-Chat: La Villita Room**

ASM Distinguished Lecturer - Dr. Bettina Fries, MD, Ph.D.

Careers Paths in Microbial Sciences

This is an opportunity for students, post docs and others to interact with ASM Distinguished lecturer

12:00pm **Closing Remarks Dr. Madhusudan Choudhary, President, Texas ASM Branch**

12:15pm **Meeting Adjourned**