

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 Venue

Durango Building

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

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

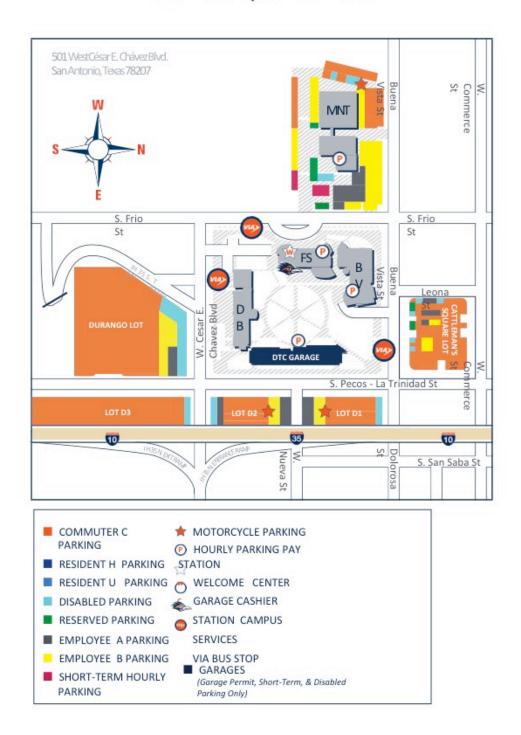


Directions to Meeting Venue: If you click or copy the following address it should take you to UTSA Downtown Campus- Durango Building 501 W. César E. Chávez Blvd.

San Antonio, TX 78207

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

The University of Texas at San Antonio Campus Services



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, <u>Institute for Human Infections & Immunity</u> Scientific Director, Galveston National Laboratory Professor, Microbiology & Immunology and Pathology The University of Texas Medical Branch, Galveston, TX

Phone: (409) 266-6500

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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, <u>Institute for Human Infections & Immunity</u> 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"



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 <i>Enterobacteriaceae</i> |
| 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 <i>Vibrio cholerae</i> interactions with the commensal fungus <i>Candida albicans</i> |
| 11:35 - 11.55am | Donghoon Kang - Rice University 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 <u>B</u> orrelia – <u>p</u> eptidoglycan <u>i</u> nteracting <u>P</u> rotein (BpiP) contributes to the fitness of <i>Borrelia burgdorferi</i> 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 <i>Pseudomonas aeruginosa</i> 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, Research Assistant Professor, 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 <i>Vibrio cholerae</i> |
| 11:20 - 11:45am | Emily K. DeCurtis, Department of Biological Sciences, The University of Texas at Dallas |
| | Investigating the <i>in vitro</i> 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 <i>Staphylococcus aureus</i> (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. |
| | Vendor tables will be in El Paseo Room B. |
| 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. |
| | 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. |
| 3:00 - 3:25pm | Dr. Cara Boutte, Assistant Professor, The University of Texas at Arlington. The mycobacterial cell wall – a moving target |
| 3:25 - 3:50pm | Dr. Joseph Boll, Assistant Professor, The University of Texas at Arlington. Solving a multidrug resistance puzzle: Complete Loss of l ipooligosaccharide |
| 3:50 - 4:15pm | Dr. Carolyn Cannon, Associate Professor, Texas A&M University College of Medicine Silver bullets: Novel silver-based antimicrobials to treat multi-drug resistant pathogens |
| 4:15 - 4:40pm | Dr. Nicole De Nisco, Assistant Professor, The University of Texas at Dallas. 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 <i>Schistosoma mansoni</i> 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, Reagents' Professor, Department of Biology, Texas State University |
| 6:00-7:30pm | Banquet |
| 7:30: 8:00pm | Awards Presentation: Dr. Robert McLean, Reagents' 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, Nov | ember 9 th |
| 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 | 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, |
| 9:00 - 9:25am 9:25 - 9:50am. | 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 Dr. Jeffrey W. Turner, Assistant Professor, Texas A&M University - Corpus Christi Characterizing the microbial response to plastic and bioplastic debris |
| | 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 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 |

| | 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. Camila Carlos-Shanley, Assistant Professor, Department of Biology Texas State University |
| | Eco-evolutionary dynamics in lignocellulose-degrading microbial communities |
| | |
| 11:10am - 12:00pm | Micro-Chat: La Villita Room |
| 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 |
| 11:10am - 12:00pm 12:00pm | 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 |