



**Texas**  **Branch**

American Society for Microbiology

**Program**

**2018 Fall Meeting**

**November 8 - 10, 2018**

**Hosted by Texas A&M University-Corpus Christi (TAMU-CC)**

**6300 Ocean Drive, Corpus Christi, Texas**



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## Meeting Sponsors

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# Meeting Venue

University Center

Texas A&M University-Corpus Christi

6300 Ocean Drive, Corpus Christi, TX 78412

<http://studentactivities.tamucc.edu/universitycenter/index.html>



## Directions to Meeting Venue

From the Omni Hotel in Corpus Christi:

<https://goo.gl/maps/7HmheLqB4zJ2>

Head south on Shoreline Blvd 1.4 mi

Continue onto Ocean Dr. 6.3 mi

Turn right onto Island Blvd 0.2 mi

Turn left onto Oso Dr. 0.1 mi

Park in the Bayside Parking Garage

Destination (University Center) is building #31 on the campus map (see page 6)

# Campus Map

The University Center is building #31 on the campus map. Parking is available in the Bayside Parking Garage for a nominal fee (\$10 daily).



## Meeting Accommodations

We recommend that guests consider staying at the Omni Hotel in Corpus Christi, Texas. The Omni is one of the city's premier hotels overlooking Corpus Christi Bay. The hotel is conveniently located at 900 North Shoreline Blvd, which connects with Ocean Drive, allowing guests to travel to and from the TAMU-CC campus via a single road (see Directions of page 5). The Omni is also conveniently located less than half a mile from the Bar Under the Sun (BUS), where the Friday banquet and awards ceremony will take place. We have negotiated an affordable rate for TX-ASM guests.



## Directions to Omni Hotel

900 North Shoreline Blvd  
Corpus Christi, TX 78401  
(361) 887-1600

Detailed directions from the Corpus Christi International Airport, via I-37 South, via US-77 South, via US-77 North and via US-59 East are available at the hotel website:

<https://www.omnihotels.com/hotels/corpus-christi/property-details/directions>.

The Omni also offers complimentary shuttle service to and from the airport.

## Banquet and Awards Ceremony Venue

The Friday (Nov. 9<sup>th</sup>) banquet and awards ceremony will take place at the Bar Under the Sun (BUS) at 702 N Chaparral Street in downtown Corpus Christi. This venue is only 3 blocks from the Omni Hotel. You can learn more about the venue here <http://barunderthesun.com/>.



## Directions to Bar Under the Sun

702 N Chaparral Street  
Corpus Christi, TX 78401  
(361) 462-4121

From the Omni Hotel in Corpus Christi, Bar Under the Sun is literally 3 blocks away.

<https://goo.gl/maps/FMchzogfJXR2>

Turn right at Twigg St. < 0.1 miles

Turn left at left at N Chaparral St. < 0.1 miles

Destination will be on your right.

# Distinguished and Keynote Speakers

## **ASM Distinguished Lecturer**

Cheryl A. Nickerson, PhD  
Professor, Center for Immunotherapy, Vaccines and Virotherapy  
The Biodesign Institute  
Arizona State University  
1001 S. McAllister Ave, Box 875401  
Tempe, AZ 85287-5401  
Phone: (480) 727-7520  
Email: [Cheryl.Nickerson@asu.edu](mailto:Cheryl.Nickerson@asu.edu)

## **Keynote Speaker**

Jason Gill, PhD  
Assistant Professor Bacteriophage Biology and Microbiology  
Department of Animal Science  
Texas A&M University  
NMR Facility, Office N318A  
College Station, TX 77843  
Phone: (979) 458-9286  
Email: [jason.gill@tamu.edu](mailto:jason.gill@tamu.edu)

## ASM Distinguished Lecturer Cheryl A. Nickerson, PhD



(photo credit <https://biodesign.asu.edu/cheryl-nickerson>)

Dr. Nickerson is a professor in the School of Life Sciences at the Biodesign Institute at Arizona State University. She received her undergraduate degree in biology at Tulane University, her MS in genetics at the University of Missouri, and her PhD in microbiology at Louisiana State University (LSU). She did a postdoc in bacterial pathogenesis with Roy Curtiss at Washington University in St. Louis from 1994-1998 and started her academic career as an assistant professor in the Department of Microbiology and Immunology at the Tulane University Medical Center in 1998. In 2006, she moved to the Biodesign Institute at Arizona State University, where she is now a full professor.

Dr. Nickerson has received a number of prestigious awards for her work including the Charles C Randall Award in 2000 for outstanding young faculty from ASM, the Presidential Early Career Award for Scientists and Engineers (PECASE) in 2001, and the NASA Exceptional Scientific Achievement Medal in 2011. As a reflection of her impact beyond academia, she was also named the 2002 Woman of the Year in New Orleans, has testified about the importance of microgravity research before Congress, and was a finalist for the Arizona BioIndustry Association Research Excellence award in 2011. Of particular note, Cheryl Nickerson was a NASA Astronaut Candidate finalist in the class of 2004.

Dr. Nickerson's lab studies the effects of physiologically relevant biomechanical forces on microbial and human cells during infection, in an emerging field that she describes as the "Mechanobiology of Infectious Disease". Her lab has developed several innovative model systems to study these processes, including 3-D cell culture models of human tissues to study host-pathogen interactions, and approaches that characterize the pathogen responses to physiological fluid shear forces encountered in the infected host, as well as in the microgravity environment of spaceflight. Her research has flown on numerous space shuttle missions, the International Space Station, and more recently on SpaceX flights. She serves as editor-in-chief of *npj Microgravity* (published by Nature Publishing Group) and is an invited member on two

National Academies panels related to microgravity research and human health risks associated with spaceflight.

It is a real honor to have Dr. Cheryl Nickerson present the ASM Distinguished Lecture at our meeting.

**Keynote Speaker, Jason Gill, PhD**

Dr. Jason Gill's major research focus is the biology and application of bacteriophages. As natural predators of bacteria, phages are attractive agents for the control of pathogenic bacteria in humans, animals, and foods. Research in Dr. Gill's lab encompasses phage genomics, basic phage biology and the applications of phages in real-world settings against pathogens including *Salmonella*, *Staphylococcus aureus*, *Klebsiella pneumoniae*, *Acinetobacter baumannii* and pathogenic *E. coli*. Born and raised in Canada, Dr. Gill received BSc and MSc degrees from Brock University and his PhD from the Department of Food Science at the University of Guelph, Canada. Dr. Gill joined the faculty of the Department of Animal Science at Texas A&M University in 2013. In addition to his appointment in Animal Science, Dr. Gill also is a member of the Center for Phage Technology, an interdisciplinary research and teaching initiative supported by Texas A&M AgriLife Research.



# Texas Branch

American Society for Microbiology

## Detailed Schedule November 8 – 10, 2018

### Thursday, November 8<sup>th</sup>

- 4:00pm **Check in** at Omni Hotel at 900 North Shoreline Drive, Corpus Christi, TX 78401. You can contact the hotel at (361) 887-1600 if needed.
- 6:00-7:00pm **Registration table** open at the University Center foyer. Direction to the University Center can be found on page 5 and 6 of this program. The University Center is building #31 on the campus map (see page 6).
- 6:00-7:00pm **Desserts and coffee** available at University Center Ballroom 147B.
- 7:00-7:15pm **Welcome/Introduction** by Dr. Jeffrey W. Turner (Texas A&M University-Corpus Christi) in the University Center Ballroom 147C.
- 7:15-8:00pm **Keynote address** by Dr. Jason Gill (Texas A&M University) in the University Center Ballroom 147C.
- Phage therapy for treating MDR bacterial infections: A 100-year development cycle**
- 8:00-8:30pm Open **business meeting**.

### Friday, November 9<sup>th</sup>

- 7:00am-8:30am **Vendor setup** in University Center Ballroom 147D.
- 7:00am-12:00pm **Poster Setup** in the University Center Ballroom 147D.
- 8:00am-12:00pm **Breakfast** (whole fruit, assorted pastries, granola, and coffee) available in the University Center Ballroom 147D. Items will be available throughout the morning.

8:00am-12:00pm **Registration table** open at the University Center foyer. Direction to the University Center can be found on page 5 of this program. The University Center is building #31 on the campus map (see page 8).

8:15-8:30am **Welcome/Introduction** by Dr. Jeffrey W. Turner (Texas A&M University-Corpus Christi) in the University Center Ballroom 147C.

8:30-9:30am **ASM Distinguished Lecturer** Dr. Cheryl Nickerson (Professor, Center for Immunotherapy, Vaccines and Virotherapy, The Biodesign Institute, Arizona State University) in the University Center Ballroom 147C.

**Outpacing Infectious Disease - Mimicking the Host-Pathogen Microenvironment**

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9:30-11:30am Student presentations in 3 concurrent sessions in the University Center Anchor Ballroom 147A, 147B, and 147C.

**Session A: Grad Student Research, Environmental Microbiology Ballroom 147A**

**Session Chair: Robert McLean, PhD**

**Institution: Texas State University**

9:30-9:50am Jasleen Kaur, University of Texas Rio Grande Valley  
**Invisibles having visible impact- Effects of Arbuscular Mycorrhizal Fungi (AMF) on growth and herbivore defense in Sudan Grass**

9:50-10:10am Nevada King, University of Texas at Tyler  
**Microbial Hg methylation characterized by Illumina sequencing in Caddo Lake, TX Kiley**

10:10-10:30am Lee J. Pinnell, Texas A&M University-Corpus Christi  
**Life on a nurdle: the microbial response to plastic and bioplastic in the Laguna Madre, TX**

10:30-10:50am Kiley Seitz, University of Texas at Austin  
**Novel Asgard archaea capable of short-chain hydrocarbon cycling**

10:50-11:10am Morgan Sobol, Texas A&M University-Corpus Christi  
**Molecular characterization of fungi in the oligotrophic marine subsurface**

11:10-11:30am Spandana Vemulapally, Texas State University  
**Nodule formation of typical and atypical *Frankia* isolates from *Casuarina sp.* on their potential host plant, *Casuarina equisetifolia***

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**Session B: Undergrad Student Research**

**Ballroom 147B**

**Session Chair: Daisy Zhang, PhD**

**Institution: Del Mar College**

- 9:30-9:50am Sandra Amend, Texas A&M University-Corpus Christi  
**Genomic analyses reveal mechanisms of extreme osmoregulation in hypersaline Vibrionaceae**
- 9:50-10:10am LarReshia Brumfield, Texas A&M University-Corpus Christi  
**Utilization of Polymerase Chain Reaction (PCR) to detect the presence of *vcgC* in *Vibrio vulnificus* isolates from the Coastal Bend region of Texas**
- 10:10-10:30am Donghoon Kang, Rice University  
**The interdependence between iron acquisition and biofilm formation in *Pseudomonas aeruginosa***
- 10:30-10:50am Claudia McCown, University of North Texas  
**Utilization of codon bias and bioinformatics to predict host range of *Streptomyces* bacteriophages**
- 10:50-11:10am Angela Smith, Texas A&M University-Corpus Christi  
**Increased *Salmonella enterica* serovar Typhimurium-host cell invasion in vitro through induction of SPI1 Type Three Secretion System**
- 11:10-11:30am Kimberley Kissoon, University of Houston-Downtown  
**Exopolysaccharides drive density-dependent colony expansion of socially motile *Myxococcus xanthus* cells**
- 11:30-11:50am John Ramirez, Del Mar College  
**Identification of regulatory structures located within mycobacteriophage genomes**
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**Session C: Grad Student Research, Medical Microbiology**

**Ballroom 147C**

**Session Chair: Heidi B. Kaplan, PhD**

**Institution: McGovern Medical School, University of Texas Health Science Center at Houston**

- 9:30-9:50am Maliha Batool, Texas A&M University  
**Identification of surface epitopes associated with protection against highly immune-evasive VlsE-expressing Lyme disease spirochetes**

9:50-10:10am	Moamen Elmassry, Texas Tech University <b><i>Pseudomonas aeruginosa</i> changes its carbon metabolism transcriptome in response to blood from trauma patients, which influences its virulence in-vitro</b>
10:10-10:30am	Misha Kazi, University of Texas at Arlington <b>Characterization of novel MBL-inhibitors</b>
10:30-10:50am	Jolene Ramsey, Texas A&M University <b>A bacteriophage Mu releasin protein unleashes the endolysin to accomplish host lysis</b>
10:50-11:10am	Yusuf Tamer, University of Texas Southwestern Medical Center <b>Evolution of trimethoprim resistance in <i>Escherichia coli</i> is driven by epistasis between dihydrofolate reductase mutations with distinct resistance mechanisms</b>
11:10-11:30am	Lacin Yapindi, Southern Methodist University <b>The high-risk human papillomavirus subtype-18 E6 oncoprotein induces the Tp53-induced glycolysis and apoptosis regulator (TIGAR), an antioxidant effector that is essential for in vivo tumorigenesis</b>
11:30am-2:30pm	<b>Lunch</b> on your own in the University Dining Hall or the University Center Dining Cove where several popular dining options (e.g., Panda Express, Chick-fil-a, So Deli, and salad bar) are located.
12:30-2:30pm	<b>Poster Session.</b> Poster presenters will be stand by their poster for a 1-hour shift: Environmental 12:30pm to 1:30pm and Medical 1:30pm to 2:30pm. Posters will be on display in the University Center Ballroom 147D.  Vendor tables will be available in the same room (147D).
2:30-3:00pm	<b>Eugene and Millicent Goldschmidt Graduate Student Award</b> Nicole C. Elledge, Texas A&M University-Corpus Christi University Center Ballroom 147C  <b>Stormwater is a pulse disturbance that alters bacterial community composition in urbanized bays</b>

3:00-5:00pm Scientific presentations in 3 concurrent sessions in the University Center Anchor Ballroom 147A, 147B, and 147C.

**Session A: Phycology, Ballroom 147A**

**Session Chair: Deana Erdner, PhD**

**Institution: University of Texas Marine Science Institute**

3:00-3:20pm Dr. Bum Soo Park, University of Texas Marine Science Institute  
**Potential role of oil-degrading bacteria in the formation of a harmful dinoflagellate blooms after oil spills: evidence from culture experiments**

3:20-3:40pm Dr. Deana Erdner, University of Texas Marine Science Institute  
**Structure and function of the microbiome of the toxic dinoflagellate *Alexandrium tamarense***

3:40-4:00pm Dr. Paul V. Zimba, Texas A&M University-Corpus Christi  
**Microbial community structure differences in the hypersaline wind-tidal flats of Laguna Madre, TX, USA**

4:00-4:20pm Dr. Katherine A. Perri, State University of New York  
**Can photosynthetic yield be used as an indicator for nutrient limitation in *Microcystis aeruginosa* UTEX LB 3037?**

4:20-4:40pm Dr. Schonna R. Manning, University of Texas Austin  
**Omics-based monitoring of *Prymnesium parvum* (Haptophyta) and its toxins**

4:40-5:00pm Dr. Darren W. Henrichs, Texas A&M University-College Station  
**Bloom initiation of *Karenia brevis* on the Texas coast: Can it be predicted?**

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**Session B: Microbial Ecology, Ballroom 147B**

**Session Chair: Brandi Kiel Reese, PhD**

**Institution: Texas A&M University-Corpus Christi**

3:00-3:20am Dr. Jessica Labonté, Texas A&M University-Galveston  
**Disturbance and recovery of the microbial communities in Galveston Bay following Hurricane Harvey and flooding of the Houston area**

3:20-3:40am Dr. Madhan R. Tirumalai, University of Houston  
**Evaluation of acquired antibiotic resistance in *Escherichia coli* exposed to long-term low shear modelled microgravity and background antibiotic exposure**

- 3:40-4:00am Dr. Brandi Kiel Reese, Texas A&M University-Corpus Christi  
**Intraterrestrial fungus: From deep sea to deep space**
- 4:00-4:20am Dr. Camila Carlos-Shanley, Texas State University  
**Microbial symbiosis in a changing world: the effect of temperature on gut bacteria of the eastern subterranean termite, *Reticulitermes flavipes***
- 4:20-4:40am Dr. Vikram Kapoor, University of Texas at San Antonio  
**Molecular detection of fecal indicator bacteria and human-associated *Bacteroidales* in a Texas river impacted by Hurricane Harvey**
- 4:40-5:00am Dr. Brenda Rushing, Texas A&M University-San Antonio  
**Metagenomic and metabolic microbiome analysis of native plant soils versus invasive plant soils and the effect of soil inoculation on plant growth**
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**Session C: Microbial Infectious Disease, Ballroom 147C**  
**Session Chair: Richard Laughlin, PhD**  
**Institution: Texas A&M University-Kingsville**

- 3:00-3:20pm Dr. Catherine A. Wakeman, Texas Tech University  
**Cooperation versus competition in polymicrobial infections**
- 3:20-3:40pm Dr. Janakiram Seshu, University of Texas at San Antonio  
**Metabolic Control of Virulence Potential of the Agent of Lyme disease**
- 3:40-4:00pm Dr. Wenhan Zhu, University of Texas Southwestern Medical Center  
**Precision editing of the gut microbiota ameliorates colitis and colorectal tumorigenesis**
- 4:00-4:20pm Dr. Natasha Kirienko, Rice University  
**A whole organism, host-pathogen screening system identifies novel therapeutic leads**
- 4:20-4:40pm Dr. Karl E. Klose, University of Texas San Antonio  
***Vibrio cholerae* induced inhibition of *Candida albicans* filamentation**
- 4:40-5:00pm Dr. Randall Olsen, Houston Methodist Hospital  
**Whole genome sequencing of microbes during disasters**
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- 5:00-7:00pm **Free Time.** (Take down posters, refresh at the hotel, meet with a new colleague or an old friend). University Center closes at 600PM.
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- 7:00-8:30pm      **Banquet and Awards Ceremony** will take place at the Bar Under the Sun at 702 N Chaparral Street in downtown Corpus Christi. Directions from the hotel to the venue can be found on page 8 of this program. Entertainment will be provided by the Texas A&M University-Kingsville Mariachi Band.
- 7:00pm              **Welcome address** by Dr. Richard Laughlin, Texas A&M University-Kingsville.
- 7:00-8:00pm      **Banquet.**
- 8:00-8:30pm      **Awards Presentation.**

## **Saturday, November 10<sup>th</sup>**

- 9:00-9:30am      **Breakfast** (whole fruit, assorted pastries, granola, and coffee) available in the University Center Anchor Ballroom 147B. Items will be available throughout the day.
- 9:00-9:30am      **Registration table** open at the University Center foyer. Direction to the University Center can be found on page 5 of this program. The University Center is building #31 on the campus map (see page 5 and 6).
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- 9:30-11:30am      Concurrent sessions on Big Data Science, Career Advice, and STEM Education in the University Center Ballroom 147A, 147B, and 147C.
- Session A: Big Data Science, Ballroom 147A**  
**Session Chair: Jessica Labonté, PhD**  
**Institution: Texas A&M University-Galveston**
- 9:30-9:50am      Dr. Brett Baker, University of Texas Marine Science Institute  
**Leveraging metagenomics to explore marine sediments**
- 9:50-10:10am      Dr. Gary Adams, Texas A&M University  
**Prediction and validation of host:pathogen protein-protein interactions from an *in vivo* model of infection**
- 10:10-10:30am      **Panel discussion.** Faculty and students will serve on a panel and field questions about Big Data Science.
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**Session B: Career Advice for Scientists from ASM Distinguished Lecturer Dr. Cheryl Nickerson, Ballroom 147B**

**Session Chair: Cheryl Nickerson, PhD**

**Institution: Arizona State University**

9:30-10:30am The ASM Distinguished Lecturer Dr. Cheryl Nickerson will be available to meet with graduate and undergraduate students, postdocs, early career scientists, and junior faculty regarding careers in science.

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**Session C: STEM Education, Ballroom 147C**

**Session Chair: Daiyuan Zhang, PhD and Linnea Fletcher, PhD**

**Institution: Del Mar College and Austin Community College**

9:30-9:50am Dr. Richard C. Laughlin, Texas A&M University-Kingsville  
**An observational exercise to prepare microbiology students for the unknown project**

9:50-10:10am Dr. Lee E. Hughes, University of North Texas  
**Expand undergraduate opportunities by creating your own course-based undergraduate research experience**

10:10-10:30am Dr. Robert McLean, Texas State University  
**Undergraduate research at four-year colleges and universities**

10:30-10:50am Dr. Brandi Kiel Reese, Texas A&M University-Corpus Christi  
**Using authentic research experiences to create bridges between community college and universities**

10:50-11:10am Dr. Daisy Zhang, Del Mar College  
**A summer SURE program to connect SEA-PHAGE and PARE at Del Mar College**

11:10-11:30am **Breakout Session.** This is an opportunity for continued discussion and networking.

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11:30pm VERY brief **Closing Remarks** by Dr. Jeffrey W. Turner, Texas A&M University-Corpus Christi, in the University Center Ballroom 147C.

12:00pm **Meeting Adjourned**