





STCEID

South Texas Center for Emerging Infectious Diseases

Mission

The Mission of The South Texas Center for Emerging Infectious Diseases (STCEID) is to advance the fields of Microbiology, Immunology, and Infectious Diseases through Research, Education, and Collegial Interaction.

The South Texas Center for Emerging Infectious Diseases (STCEID) was established to focus state and national attention on UTSA in the fields of molecular microbiology, immunology, medical mycology, virology, microbial genomics, vaccine development and biodefense. One of the major areas of emphasis at STCEID is on the pathogenic mechanisms of emerging infectious diseases.

UTSA has assembled an impressive group of researchers who specialize in the study of infectious diseases creating one of the premier centers for this type of research in the nation. New state-of-the art facilities and the diverse expertise of the faculty belonging to the Center provide an excellent environment to answer critical questions relating to emerging and bioweapon-related diseases.

The facilities and faculty at the Center serve a very important role in providing hands-on training to undergraduate and graduate students who intend to pursue careers in science and technology. The Department of Molecular Microbiology and Immunology offers Bachelor of Science and Doctoral degrees in Microbiology and Immunology. The Department of Integrative Biology houses the Biology M.S. program which offers a thesis option with an emphasis in Microbiology and Immunology.

STCEID Research Expertise

- ⚙ Autoimmune Disease
- ⚙ Biodefense
- ⚙ Bioinformatics
- ⚙ Drug Discovery and Development
- ⚙ Host-Pathogen Interactions
- ⚙ Immunology
- ⚙ Immunopathology
- ⚙ Microbial Genomics
- ⚙ Microbiology
- ⚙ Neuroinflammation
- ⚙ Parasitology
- ⚙ Pharmacology
- ⚙ Vaccine Development
- ⚙ Vector-Borne Diseases
- ⚙ Virology

STCEID Resources

- ⚙ Two licensed ABSL-3 Facilities
- ⚙ Two certified ABSL-2 Facilities
- ⚙ Cell Analysis Core
- ⚙ Genomics Core
- ⚙ High Performance Computing
- ⚙ Infectious Diseases Animal Modeling / Humanized Mice
- ⚙ Laboratory Animal Resources Center
- ⚙ Mass Spectrometry & Proteomics Core
- ⚙ Multi Photon Microscopy Suite
- ⚙ Stem Cell Core
- ⚙ Partnerships in Global Infectious Diseases
- ⚙ Partnership with Texas Biomed

STCEID Seminars

Sponsored by Ewing Halsell Foundation of San Antonio

Seminars are held from 9:00-10:00 am at the UTSA main campus in BSB 3.03.02

website: <https://www.utsa.edu/stceid/seminars.html>

STCEID microTalk Podcasts

hosted by Karl Klose and colleagues from STCEID

Discussions with researchers in the field of infectious diseases

website: <https://asm.org/Podcasts/microTalk/>

STCEID Members



Hamid Badali, Ph.D.

Assistant Professor of Research

Research: antifungal screening, drug development

Dr. Badali's research focuses on antifungal screening and drug development, *Candida albicans* and *Candida auris* biofilm, development of nano drug delivery for fungal infection, mechanisms of antifungal resistance, medical mycology, and nanoparticulate of antifungal drug delivery.



Astrid Cardona, Ph.D.

Professor of Immunology

Research: neural immunology

Dr. Cardona's research is focused on understanding the mechanisms of tissue damage in Multiple Sclerosis and Diabetic retinopathy. Her laboratory focuses on the functional interactions between immune cells, microglia, neurons and blood vessels.



James Chambers, Ph.D.

Professor of Biochemistry

Research: biosensors, bacterial pathogens

Dr. Chambers' research interests focus on biosensors, influenza epidemiology, and *Francisella tularensis*. He seeks to understand the processes that make it possible to develop new and novel treatment regimes, with special regard to treatments for illness associated with *F. tularensis*.



Mark Eppinger, Ph.D.

Associate Professor of Microbial Genomics

Research: bioinformatics, microbial genomics

The focus of Dr. Eppinger's research is the application of microbial genomics to address fundamental questions in emerging infectious diseases research. Current interests are directed towards large-scale sequencing and phylogenomic studies investigating major public health threats.



Thomas Forsthuber, M.D., Ph.D.

Professor of Immunology

Research: autoimmune disease

Dr. Forsthuber's lab researches the role of the immune system in human diseases, in particular on T lymphocytes in autoimmune diseases such as multiple sclerosis, and in infectious diseases.

STCEID Members



Neal Guentzel, Ph.D.

Professor of Microbiology

Research: microbial pathogenesis and immunology

Dr. Guentzel's research focuses on microbial pathogenesis and immunity to infectious diseases. His lab is studying the mechanisms of virulence used by various microorganisms, especially in the gastrointestinal tract.



Kirsten Hanson, Ph.D.

Assistant Professor of Biology

Research: host-parasite interaction

Research in Dr. Hanson's lab focuses on the cellular and developmental biology of *Plasmodium* parasites and host-parasite interactions, particularly in the asymptomatic liver stage of the parasite lifecycle.



Hans Heidner, Ph.D.

Professor of Virology

Research: alphaviruses

Dr. Heidner's research focuses on the replication of alphaviruses in vertebrate and mosquito cells, as well as the use of alphavirus-based vectors for cell targeting and vaccine applications and development.



Chiung-Yu Hung, Ph.D.

Associate Professor of Microbiology and Immunology

Research: host-pathogen interactions

Dr. Hung's research focuses on characterization of protective immunity and vaccine development, discovery of novel fungal chemotherapies, and development of rapid screening methods for drug discovery.



Karl Klose, Ph.D.

Professor of Microbiology

Research: bacterial pathogenesis

Dr. Klose's lab is interested in bacterial pathogenesis – how bacteria cause disease. The lab is researching *Vibrio cholerae*, the bacterium that causes cholera, and *Francisella tularensis*, the bacterium that causes tularemia.

STCEID Members



Soo Chan Lee, Ph.D.

Assistant Professor of Biology

Research: host-human pathogenic fungi interactions

Dr. Lee's lab focuses on medical mycology and fungal pathogenesis, primarily mucormycosis, an emerging fungal infection that poses serious threats to public health.



Jose Lopez-Ribot, Pharm.D., Ph.D.

Professor of Microbiology

Research: pathogenesis of candidiasis

Dr. Lopez-Ribot's lab studies fungal infections, with an emphasis on the opportunistic pathogenic fungus *Candida albicans*. Main projects in the lab deal with targeting virulence factors for the development of novel antifungal agents.



Rahul Raghavan, Ph.D.

Associate Professor

Research: microbial genomics

Research in Dr. Raghavan's lab combines molecular microbiology with evolutionary genomics to investigate how changes in proteins and non-coding RNAs facilitate bacterial adaptation.



Jesus Romo, Ph.D.

Assistant Professor

Research: fungal-bacterial interactions

Dr. Romo's research is focused on characterizing the role and impact of fungal colonizers in the mammalian gastrointestinal tract during infection by bacterial pathogens. Of particular interest is trans-kingdom interactions between fungi, bacteria, and their host.



Stephen Saville, Ph.D.

Associate Professor of Genetics

Research: fungal pathogen *Candida albicans*

Dr. Saville's lab focuses on the genetic regulation of *Candida albicans* cell shape and determining how morphological changes impact the ability of the fungus to cause disease in both mucosal and disseminated infection models.

STCEID Members



Janakiram Seshu, Ph.D.

Professor of Bacterial Pathogenesis

Research: host-pathogenic bacteria interaction

Research in Dr. Seshu's lab deals with bacterial pathogenesis, *Borrelia burgdorferi* (the causative agent of Lyme disease), *Coxiella burnetii* (the causative agent of Q fever), and the biology of Spirochetes.



Yufeng Wang, Ph.D.

Professor of Bioinformatics and Computational Biology

Research: comparative genomics, molecular evolution, systems biology

Research in Dr. Wang's lab centers on the evolutionary mechanisms and systems biology of infectious diseases and the molecular evolution of vertebrate gene families.



Jieh-Juen Yu, Ph.D.

Associate Professor of Research

Research: bacteria-host interactions

Dr. Yu's research interests are in the development of vaccines against respiratory bacterial pathogens and the elucidation of host immune responses to bacterial infection.



Guoquan Zhang, DVM, Ph.D.

Professor

Research: aerosolized intracellular bacterial pathogens

Dr. Zhang's research focuses on understanding the cellular and molecular mechanisms of protective immunity against aerosolized intracellular bacterial pathogens and developing novel approaches for discovery of safe, effective vaccines and immunotherapeutic strategies.



Yan Zhang, Ph.D.

Associate Professor of Research

Research: host cell-microbial pathogen interaction

Dr. Zhang's research interests involve the mechanisms of host cell-microbial pathogen interaction and developing vaccines against cancer and infectious diseases.