

The training grant provides full support for eight students per year. Students are taught broad aspects of vector-pathogen-vertebrate relationships in the course “Biology of Arthropod Vectors”, and also attend seminars and meet with speakers at the “Infectious Diseases and Immunity Colloquium”. In addition to laboratory-based research, several students have also been trained to conduct field work in South America, Mexico and Africa. UTMB Graduate School of Biomedical Sciences <http://www.gsbs.utmb.edu/>

#### ■ | JAMES W. McLAUGHLIN FELLOWSHIPS

The James W. McLaughlin Endowment was established in 1952 by Mr. A.C. McLaughlin in honor of his father. The purpose of the fund is to promote training and education in the broad fields of infection and immunity. The endowment currently supports approximately 6 pre-doctoral and 6 post-doctoral fellows. Importantly, candidates for this program do not need to qualify for the citizenship and immigration requirement imposed by NIH T32 grants. For more details, please see <http://www.utmb.edu/McLaughlin>.

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##### T32 COMPUTATIONAL AND STRUCTURAL BIOLOGY IN BIODEFENSE TRAINING PROGRAM

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#### ■ | THE W. M. KECK CENTER FOR VIRUS IMAGING TRAINING PROGRAM

The training program is open to pre-doctoral and post-doctoral fellows in virology and is aligned with the Center’s research program, which has as its goal the study of the assembly and replication of four groups of emerging RNA viruses using confocal and cryoelectron microscopy. These are viruses that have recently been discovered, have increased their infection of people in recent years, or threaten to increase in the near future. Many of these emerging viruses are among the most virulent pathogens known, and several have been, or may be, developed into potent biological weapons. The Gulf Coast Consortia/Keck Center for Interdisciplinary Bioscience Training provides research, infrastructure and training support for the W. M. Keck Center for Virus Imaging. Trainees in the Virus Imaging Program are designated as Keck Fellows and join more than 70 pre-doctoral and post-doctoral trainees participating in one of the nine GCC/Keck Center Training Programs. For more details, please go to <http://cohesion.rice.edu/centersandinst/gcc/vitp.cfm>.

#### ■ | T32 COMPUTATIONAL AND STRUCTURAL BIOLOGY IN BIODEFENSE TRAINING PROGRAM

This multidisciplinary pre-doctoral training program in Computational and Structural Biology in Biodefense spans the fields of biochemistry, biophysics, molecular biology, structural biology, bioinformatics, genomics, proteomics, database management, chemical biology, cell biology, immunology, virology and pathology. It is affiliated with the multi-institutional training program of the W. M. Keck Center for Interdisciplinary Biosciences Training. The last 20 years have seen a remarkable resurgence of infectious diseases and the emergence of new ones, such as AIDS and SARS, as well as the new threat from bioterrorism. Consequently, there is a critical need to train first-rate, imaginative and creative scientists in this multidisciplinary field. For more details, please see <http://cohesion.rice.edu/centersandinst/gcc/csbb.cfm>.

## Creating Tomorrow’s Solutions to Infectious Diseases and Bioterrorism:

### The Training Opportunities of the UTMB Institute for Human Infections and Immunity



Galveston National Laboratory

Center for Biodefense and Emerging Infectious Diseases

Sealy Center for Vaccine Development

Center for Hepatitis Research

World Health Organization Collaborating Center for Tropical Diseases

W. M. Keck Center for Virus Imaging

World Reference Center for Emerging Viruses and Arboviruses

McLaughlin Endowment for Infection and Immunity

The world-class infectious disease programs of the University of Texas Medical Branch (UTMB) are staffed by an extraordinary group of scientists and physicians supported by state-of-the-art facilities and engaged in efforts to translate research ideas into products aimed at controlling emerging infectious diseases and defending our society against bioterrorism.

Our outstanding faculty make UTMB an international center of excellence for the study of emerging infectious diseases, including those caused by agents requiring high level biocontainment. In particular, we have world-renowned experts leading research programs on viral encephalitis and hemorrhagic fever, anthrax, SARS, influenza, hepatitis and rickettsial diseases, amongst others. We recognize the need to train the research scientists and leaders of the future, and we know the urgency of translating today's research findings into tomorrow's vaccines, therapeutics and diagnostics—products that will be important for combating naturally emerging infections, as well as mitigating the danger of bioterrorism.

### T32 PRE-DOCTORAL TRAINING IN EMERGING AND TROPICAL INFECTIOUS DISEASES

UTMB manages a National Institute of Allergy and Infectious Diseases Institutional T32 Pre-doctoral Training Grant supporting education in Emerging and Tropical Infectious Diseases, including four graduate trainees and three short-term research training positions for medical students each year. Training is provided by 17 program faculty and 18 adjunct faculty. Emerging and tropical infectious diseases encompass the broadly-based multidisciplinary sciences of microbiology, virology, parasitology, pathology, immunology, molecular biology, epidemiology, entomology, vertebrate zoology, biochemistry, structural biology and cell biology. UTMB has made a major commitment to emerging and tropical diseases with the establishment of the Center for Biodefense and Emerging Infectious Disease and a Center for Tropical Diseases that is a designated World Health Organization Collaborating Center for Tropical Diseases. This multidisciplinary Center involves components of the School of Medicine (Departments of Pathology, Microbiology and Immunology, Internal Medicine, Pediatrics, Preventive Medicine and Community Health, and Biochemistry and Molecular Biology) and the Graduate School for Biomedical Sciences. These disciplines provide an extensive resource for access of the trainees of this program to a very attractive array of research areas highly relevant to emerg-

ing and tropical infectious diseases. In addition, the faculty of the Center for Tropical Diseases has grant support for research on emerging infections and tropical diseases in the United States, Bolivia, Brazil, Peru, Colombia, Venezuela, Mexico and parts of Central America and Africa. Thus, trainees have the opportunity to undertake a variety of research topics from laboratory-based studies at UTMB to field studies in the tropics. For more details, please go to <http://www.utmb.edu/predocetid/>.

### T32 POST-DOCTORAL TRAINING PROGRAM IN EMERGING AND REEMERGING INFECTIOUS DISEASES

The post-doctoral training program in emerging and reemerging infectious diseases supports post-doctoral trainees and prepares them for clinical, epidemiologic, applied or basic careers in the field. Training is provided by 20 program faculty and 21 adjunct faculty, encompassing multidisciplinary approaches and the resources of several departments including Biochemistry and Molecular Biology, Internal Medicine, Microbiology and Immunology, Pediatrics, Pathology, and Preventive Medicine and Community Health, as well as the Center for Biodefense and Emerging Infectious Diseases, the WHO Collaborating Center for Tropical Diseases, the Sealy Center for Vaccine Development, and the Sealy Center for Structural Biology and Molecular Biophysics. UTMB also hosts the World Reference Center for Emerging Viruses and Arboviruses. We have extensive BSL-3 laboratory and animal research facilities, and the Shope BSL-4 laboratory. Approximately 90 faculty at UTMB conduct research projects in infectious diseases of all types. Very few medical schools in the United States can now claim to have a faculty as large, as diverse but collaborative in multidisciplinary studies, and of such excellence in the areas of emerging infectious diseases and biodefense. For more details, please go to [http://www.utmb.edu/infectious\\_diseases/Liz\\_EMERG-ID.htm](http://www.utmb.edu/infectious_diseases/Liz_EMERG-ID.htm).

### T32 PRE-DOCTORAL BIODEFENSE TRAINING PROGRAM

The pre-doctoral Biodefense Training Program capitalizes on UTMB's outstanding high containment facilities, including the only BSL-4 laboratory at a U.S. university, and extensive research opportunities to study the majority of NIAID Category A-C Priority Pathogens with highly experienced faculty scientists. Research opportunities include several major NIH-funded programs such as the

Emerging Viral Diseases Unit, the World Reference Center for Emerging Viruses and Arboviruses, the Biodefense Proteomics Collaboratory, and many regional, multidisciplinary biodefense projects through the UTMB-led Region VI Center of Excellence in Biodefense and Emerging Infectious Diseases. The program fosters the interdisciplinary training of young biodefense scientists through: 1) role-modeling by experienced faculty mentors; 2) flexible but rigorous didactic preparation in a wide variety of biomedical disciplines, through one of five different UTMB graduate programs, but united by a required, specialized biodefense curriculum and seminar series; 3) high containment laboratory training, including opportunities for animal and vector research training at BSL-3 and BSL-4; 4) pursuit of a specific biodefense-related dissertation research project under the supervision of experienced, externally funded, highly accomplished faculty members, and; 5) development of professional and ethical behavior that will promote high quality research and effective interdisciplinary interactions. For more details, please see [http://www.utmb.edu/pathology/education/phd\\_prog\\_experimental\\_pathology/biodefense\\_training.asp](http://www.utmb.edu/pathology/education/phd_prog_experimental_pathology/biodefense_training.asp)

### PRE-DOCTORAL TRAINING PROGRAM IN VECTOR-BORNE INFECTIOUS DISEASES

The goal of this program is to provide multidisciplinary training in vector-borne infectious diseases, with a particular focus on the mosquito-borne viruses and tick-borne bacteria that occur in the Americas.

This CDC grant trains graduate students in both theoretical and applied aspects of working with arthropod vectors of infectious diseases and the agents that they transmit. This is a multi-disciplinary program that utilizes the expertise of UTMB faculty, local mosquito control personnel, and overseas collaborators. Research on arboviruses at UTMB's Department of Pathology began in the 1990s and with the recruitment of new faculty and the establishment of the World Reference Center for Emerging Viruses and Arboviruses which contains almost 5,000 isolates, UTMB has become a leader in this field. The training program has an executive committee of internationally recognized experts in the field, eight core training faculty and 11 adjunct faculty. To facilitate research on arthropod vectors, UTMB has state-of-the-art BSL-2 and BSL-3 insectaries, constructed and operated according to the American Committee of Medical Entomology's "Arthropod Containment Guidelines <http://www.astmh.org/SIC/files/ACGv31.pdf>".