

GOOD LABORATORY PRACTICES (GLP):

To ensure research that is both reproducible and compliant with basic and regulatory quality standards, such as the FDA's Good Laboratory Practices regulations (Code of Federal Regulations), a system of safeguards is in place. For example, a Regulatory Services unit provides oversight of all GNL operations requiring compliance with regulatory guidelines to secure product licensure and allow rapid product development. Individual GNL scientific divisions such as Aerobiology and Preclinical Studies are implementing GLP quality elements into day to day approaches and will support GLP compliant studies in the future.

GNL



CONTACT INFORMATION:

For information on working with the GNL through contract or collaboration, please contact Dr. Krystyn Z. Bourne, GNL External Research Coordinator, at kzbourne@utmb.edu or by phone at 409-266-6526.

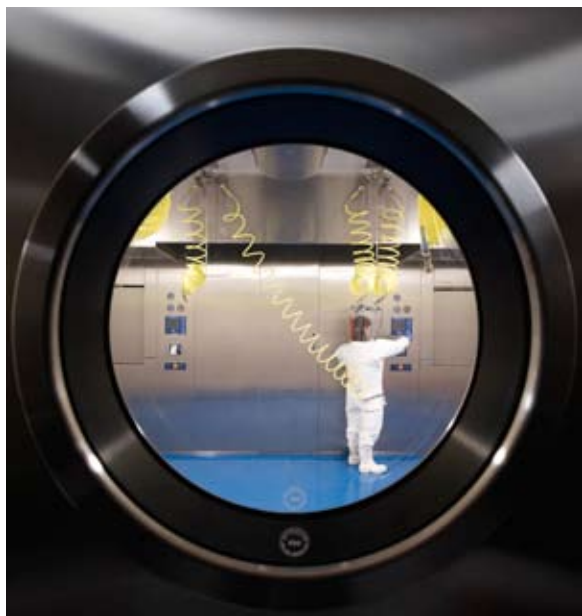
Creating tomorrow's solutions to infectious diseases and bioterrorism

GNL



For additional information on the GNL please visit us online at www.utmb.edu/gnl

 **UTMB**
Galveston National Laboratory
The University of Texas Medical Branch



THE GALVESTON NATIONAL LABORATORY (GNL) serves as a national and international resource. Within this state-of-the-art facility, an extraordinary group of scientists is engaged in efforts to translate research ideas into products aimed at controlling emerging infectious diseases and defending our society against bioterrorism. The GNL complements and enhances UTMB's decades of prominence in biomedical research. It is also home to the National Biodefense Training Center, a world-renowned resource for training researchers in infectious diseases.

Constructed in part with funding from the National Institute of Allergy and Infectious Diseases/National Institutes of Health (NIAID/NIH), the GNL provides more than 80,000 net square feet of much-needed BSL2, -3 and -4 research space certified for both select and non-select agent research. It houses specialized capabilities to develop therapies, vaccines and diagnostic tests for naturally occurring emerging diseases—as well as for microbes that might be employed by terrorists. Our team of scientists and biosafety experts is dedicated to the research and production of novel diagnostic assays, improved therapeutics and treatment models, and preventive measures such as vaccines. Our facilities are unique and our service is unsurpassed.

GNL SERVICES AVAILABLE TO RESEARCHERS IN BIODEFENSE AND EMERGING INFECTIOUS DISEASES:

AEROBIOLOGY The unit offers aerosolization services to researchers examining BSL3- and BSL4-level bacteria and viruses via inhalational exposure. The Aerobiology unit uses specialized equipment to expose models to various pathogens including select agents such as anthrax, plague and Venezuelan equine encephalitis, to allow examination of disease mechanisms and to evaluate the efficacy of potential countermeasures.

ASSAY DEVELOPMENT (AD) Services include assay development and screening for researchers who study select or emerging disease agents. AD personnel generate assays that are standardized, reproducible and useful in medium- to high- throughput screening. While the emphasis is on developing low-containment BSL2 assays, AD also designs and tests assays suitable for BSL3 and BSL4 containment.

EXPERIMENTAL PATHOLOGY (EP) The EP unit features technical support and diagnostic expertise in histology, tissue culture, advanced microscopy and flow cytometry for researchers. EP offers routine histological services and *in situ* hybridization analyses, as well as state-of-the-art microscopy, e.g., laser-scanning confocal microscopy, and flow cytometry. The unit's Tissue Culture facility also exists as a source of scientific supplies, such as media, sera and enzymes, and serves as a safety-compliant shipping and receiving unit. In addition, diagnostic and etiological assessments from EP experts are available to public health entities in the event of disease outbreaks.

IMAGING This state-of-the-art unit provides advanced optical analysis for *in vivo* whole-animal studies and tissue specimens at BSL2, -3 and -4 biocontainment levels. The unit offers combined confocal and multiphoton microscopy imaging systems at the BSL2 and BSL3 levels for molecular imaging and microscopy, an IVIS 200 system for *in vivo* small animal molecular optical imaging, a micro PET/CT whole-animal imaging system, digital X-ray, and ultrasound equipment. Also available are a full complement of gel-imaging capabilities, as well as traditional X-ray services.

IMMUNOLOGY Services include the generation and maintenance of knockout and transgenic mouse models for immunological examinations of select and emerging disease agents. In addition, the Immunology unit develops, from these models, primary cell lines for use in *in vitro* experiments and provides experimental surgery services and monoclonal antibody production.

INSECTARIES SERVICES (IS) IS provides expert consultation and state-of-the-art equipment for research into arthropod-borne biothreat agents and emerging infectious diseases. IS facilitates research by biodefense investigators who require high and maximum containment for studies with arthropod vectors by either providing expertise and/or training for the researchers' personnel. IS also serves as a readily available advisory resource to national and local agencies in the event of national bioterrorism and emerging disease emergencies.

PRECLINICAL STUDIES (PS) The PS unit tests vaccines, diagnostics and therapeutics against challenges from biodefense and/or emerging disease agents. PS expertise includes surgical implantation of telemetric devices, as well as conducting laparoscopic, endoscopic and ultrasound-guided tissue biopsies. The unit's aim is to provide real-time data with minimally invasive techniques. PS uses, as appropriate, the GNL's other services, such as the animal support unit, which has facilities for both small animals and non-human primates, and the Aerobiology unit.

