

## **Facilities and Scientific Environment**

**Texas Tech University Health Sciences Center at El Paso (TTUHSC at El Paso):** In 2003, the Texas legislature authorized the establishment of a four-year medical school in El Paso, which led to the opening of the Paul L. Foster School of Medicine (PLFSOM) in 2009, followed by the opening of the Gayle Greve Hunt School of Nursing in 2011, Graduate School of Biomedical Sciences (GSBS) in 2013, and the Dental School in 2021. This allowed the creation of TTUHSC at El Paso by Texas Legislature in 2013. *The TTUHSC at El Paso received "Hispanic Serving Institution" status from the federal government in 2019.*

**Paul L. Foster School of Medicine Admissions Outreach Programs:** In an effort to generate interest in health professional fields, the PLFSOM Admissions office provides a number of educational opportunities for middle school and high school students to learn about careers in health sciences. The Medventure for Your Future program is hosted annually as a one-day conference to provide students and their parents about health careers and preparations needed to achieve their career goals. The Admissions office also sponsors a yearly day-summer camp that provides training in healthcare professions, college application preparation and life skills.

**Special characteristics of the institution and students:** El Paso is located in the western tip of Texas at the corner of Texas, New Mexico and Mexico. Our city is immediately adjacent to the city of Juarez, Mexico (across the border) and the city of Las Cruces, NM lies 30 miles to the North. Because of TTUHSC at El Paso's location in this international, tri-state area, El Paso has unique disease patterns which are different from the rest of the state of Texas, requiring locally trained health care personnel. TTUHSC at El Paso is the only health sciences center in this region that provides the opportunities for students to obtain training in nursing, medical and health care research.

**The Joint Admission Medical Program (JAMP):** JAMP was created by the Texas Legislature to provide support and encouragement to students of socioeconomically challenged students. As part of this program each summer the PLFSOM hosts a summer enrichment program to JAMP students from across Texas. Finally, the Shadow a Physician Program matches aspiring undergraduate students interested in medicine with community physician mentors in El Paso where they receive one-on-one interaction with practicing community physicians.

**Gayle Greves Hunt School of Nursing (GGHSON):** The GGHSON was established to address the persistent nursing shortage existing in El Paso. The school offers a number of undergraduate nursing programs including an accelerated BSN, RN to BSN and a partnership with nearby Silva Health Magnet High School fast track high school students into the accelerated BSN program by completing prerequisite courses while still in high school.

**Graduate School of Biomedical Sciences (GSBS):** The mission of the GSBS is to educate the next generation of scientists and health-related professionals by providing a dynamic research environment by fostering creativity and discovery. The GSBS offers a Master of Science (MSc) in Biomedical Sciences, a Post-Baccalaureate certificate program in Biomedical Sciences and a Certificate program for undergraduate students called "Summer Accelerated Biomedical Research" (SABR). The MSc in Biomedical Sciences is a two year program which admits about 20-30 students per year. The course has a research component in the second year and students identify a mentor and perform research under him/her for 19 hours per week throughout the second year of the program. Thus far, the School has graduated 120 students. Among them, 30% have been accepted into medical school, 20% are enrolled in allied healthcare programs such as pharmacy, physical therapy and others, 10% are pursuing doctoral degrees, and the rest are working in the biomedical health industry, state and federal agencies, and other research laboratories.

**Department of Molecular and Translational Medicine (MTM):** The MTM research enterprise is organized into programmatic Centers of Emphasis. These areas are made up of interdisciplinary teams of clinicians and scientists working together to address problems at all levels of inquiry. The programmatic areas were identified as being of special relevance to the community in which we are located on the Texas / Mexico border, and include Infectious Diseases, Cancer, Neurosciences, and Diabetes / Endocrine Diseases.

**Interdisciplinary Collaboration between Departments:** The research programs have close links with many departments throughout the university and at other universities. Intra-university collaborative projects are ongoing with the Departments of Medical Education, Obstetrics and Gynecology, Surgery, Radiology, Pathology and Internal Medicine. Inter-university collaborations include with MD Anderson, University of Texas School of Public Health Houston, Brownsville, University of Texas El Paso, University of Texas Austin, TTUHSC Lubbock, TTUHSC Amarillo and Texas A&M.

**The Office of Research:** The Office of Research supports research activities of all campuses and schools at the Texas Tech University Health Sciences Center. Dr. Clegg, the Executive Vice president for Research leads the Office of Research and is the Institutional Official in charge of its major divisions: Laboratory Animal Resources Center, Research Integrity Office and Sponsored programs. The Office of Sponsored Programs

(OSP) exists to assist faculty and staff in identifying, obtaining, and maintaining external funding that support the TTUHSC mission of instruction, research, and patient care. Numerous resources are utilized to assist faculty in identifying possible funding opportunities, including the Community of Science (COS), the world's most comprehensive funding database with utilities for identifying collaborators and interactive CV updating. OSP is responsible for reviewing and approving proposals seeking external funding from federal, state, and local agencies and negotiates contractual funding agreements with such entities (with the exception of clinical trials with drug companies). Upon receipt of an award, OSP provides assistance and oversight, including budget set-up and project revisions. OSP staff serve as administrative staff for three federally-mandated research committees: animal research (IACUC), biohazardous materials research (IBC) and recombinant DNA research (RDBC).

**Study sites, facilities and resources for cardiometabolic health assessment:** The InBody270 is a portable device to measure body composition parameters for each subject. It uses the principle of 8-point bioelectrical impedance and has been validated against dual-energy X-ray absorption (DEXA) for the determination of body composition parameters.

**Core Facilities:** Dr. Clegg has complete access to the following core facilities.

*Flow and Sorting Core Facility:* This facility provides access to multiple flow cytometers and cell sorting machines that will be required for completion of the proposed experiments. Analyzers include multiple BD Accuri C6 machines (4 colors), a BD FACS Canto II (6 colors), and a Beckman Coulter Gallios Flow Cytometer (10 colors). Cell sorters include a BD FACS Aria II (7 colors) and an Avalon Se3 Cell Sorter from Propel Labs (4 colors).

*Genomics and Proteomics Core Facility:* This facility is equipped with state-of-the-art equipment like Next Generation Sequencers, Microarray scanner, SNP Analyzer, High-Throughput Real-Time PCR machines, 2D-DIGE, HPLC, etc. TTUHSC El Paso has a High-Performance computing server dedicated to analyzing next-generation sequencing data. The server has 64 GB of RAM memory and 9 Tb of disk storage with the capability of expanding as needed. The operating system of the server is Red Hat Enterprise Linux version 8.

*Histology and Molecular Pathology Core Facility:* This facility has top of the line automated histology instrumentation.

*Imaging Core Facility:* This facility has live animal imaging equipment, ultrasound equipment, etc.

*Microscopy Core Facility:* This facility houses scanning electron microscope (SEM), Transmission electron microscope (TEM), confocal microscope, live cell imaging microscope and indirect immunofluorescence microscope.

**Information Technology:** The Information Technology Department at TTUHSC El Paso supports programs at all levels: educational, clinical, research, services, and management. IT provides both hardware and software support, maintains a client/server environment, provides connectivity and access to information, as well as IT security. Information Technology at TTUHSC has established a strong partnership with GE to facilitate deployment, maintenance, and training for Electronic Medical Records System.

**Office:** Dr. Clegg has a dedicated 200 sq. ft. office adjacent to the Office of Research. Equipment includes a desktop computer with standard peripherals and adequate storage space in lockable cabinets for any written records or other documentation.

**Animal Facility:** Animal care facilities are located on the first floor of the Medical Sciences Building (MSB I), and are under the guidance of the Laboratory Animal Resource Center (LARC), which includes a supervising veterinarian and trained animal technicians. The facility occupies 10,000 square feet and includes housing for rats and mice with rodent barriers and automated delivery of drinking water, a zebrafish room with 720 tanks with automated filtering of sea water, BSL2 and BSL3 facilities, cage washing and sterilization systems, and rodent surgical and clinical support resources. The facility has several procedure rooms equipped with supplies for surgery and experimental procedures, including biosafety cabinets, isoflurane machines for anesthesia, heating pads for thermal support, and bead sterilizers.

**Biostatistics and Epidemiology Consulting Lab (BECL):** Alok Dwivedi (co-Investigator) directs the Division of Biostatistics and Epidemiology Consulting Lab (BECL), at TTUHSC at El Paso. The BECL core facility is located on the fifth floor of the MSB II, down the hallway from Dr. Clegg's office. The BECL employs four MSc-level statistical programmers, an MSc-level database/electronic medical records programmer, and an MSc-level bioinformatics programmer. The expertise across the group includes study design and sample size, statistical analyses, including advanced methods for very small and very large samples, and other approaches for evaluation of complex biomedical data. This resource is available to all TTUHSC at El Paso researchers.

**Administrative:**

The Office of Research has an integrated team of administrative assistants that provide administrative support for faculty.

**Training resources:** TTUHSC at El Paso provides an array of resources to their new faculty, to promote their career development and success. Dr. Clegg has already attended a New Faculty Orientation and a 90-hour Faculty Development Course. Dr. Clegg will participate in and facilitate additional faculty development programs that are offered through the year including a monthly seminar series on career development organized by Women in Medicine and Science and an Institutional Faculty Mentoring Program.

TTUHSC at El Paso also provides an extensive array of training for their faculty, postdocs and staff to include: safety training, Laboratory Safety Essentials, Fire and Emergence Preparedness, and HIPPA training. Additionally, employees complete the Collaborative Institutional Training Initiative (CITI) program online courses including: Biomedical Investigator Course, Biomedical Responsible Conduct of Research, Conflict of Interest training and courses on the ethical use of animals in research, working with the IACUC and aseptic surgery.