UNTHSC Facilities and Other Resources

The University of North Texas Health Science Center

The UNT Health Science Center is one of the nation's premier graduate academic medical centers, with five schools that specialize in patient-centered education, research and health care housed on a 33-acre campus in Fort Worth's Cultural District. The university includes the Texas College of Osteopathic Medicine (TCOM), the Graduate School of Biomedical Sciences (GSBS), the School of Public Health (SPH), the School of Health Professions (SHP), the UNT System College of Pharmacy (SCP) and the joint Texas Christian University (TCU)/UNTHSC MD School scheduled to accept its first class in 2019. UNT Health, the clinical component of the UNTHSC, sees patients from across the region with physicians and health providers representing many medical specialties while providing training opportunities for our students. The UNTHSC's mission is to create solutions for a healthier community by being an extraordinary team, committed to excellence, unafraid to challenge conventional wisdom.

In 2018, the UNTHSC's over $300 million budget supported 1510 faculty and staff in 1.476 million square feet of state of the art facilities. Total enrollment for Fall 2018 was 2,258 students and sponsored research expenditures totalled $52.4 million. The campus includes a 140,000 square foot Clinical Care Building, a 160,000 square foot Center for Bio-Health and a 120,000-square-foot Medical Education building. An additional 170,000 square foot Interdisciplinary Research and Education Building which was recently completed will house both teaching and research space.

UNTHSC has a prominent and growing reputation. Our GSBS consistently leads all health science centers in Texas in the percentage of minority students enrolled, and our SPH has a more diverse student body than any other SPH in the nation. We are committed to providing Texas and the nation the highest quality health professionals.

UNTHSC offers the nation's most comprehensive medical science education on a single campus. Our student physicians, pharmacists, medical scientists, physician assistants, physical therapists, and public health experts work side by side with faculty and staff to impact the communities of Fort Worth and Texas. We believe deeply in the purpose of our institution: To transform lives in order to improve the lives of others.

Community Engagement:

- **Mobile Pediatric Unit:** overcoming common obstacles (language, transportation, and lack of insurance) in access to pediatric preventative care by taking care on the road. The clinic provides screenings, well checks, & immunizations to underserved neighborhoods of Morningside, Como, Stop Six, and the Northside. Since May 2014, when UNTHSC launched the mobile clinic, the staff has logged more than 10,384 patient visits to children in the Fort Worth neighborhoods of Morningside, Como, Stop Six and Northside. The team has administered more than 3,000 vaccines and more than 6,600 vision screenings.
- **HOME Clinic:** student run program offering screenings for HIV, dental, and vision services as well as distributing hygiene products, hats, and socks to the homeless population served by Presbyterian Night Shelter and the Day Resource Center.
- **CATCH 1 for Health:** education and clinic services provided at Morningside Elementary pairs student physicians, nurses, speech pathologists, and oral hygienists to provide comprehensive health checks reducing health disparities in children.
- **Texas Academy of Biomedical Sciences:** inspiring collaboration with FWISD, UNT-Denton and Tarrant Count College District putting high school students on a path to pursue STEM, research and medical degrees.
- **WE HAIL** (Workforce Enhancement for Health Aging and Independent Living): project to increase the number of healthcare professionals devoted to geriatric care in Tarrant County. A partnership with JPS, TCU, and the United Way.
- **SAGE:** The Seniors Assisting in Geriatric Education (SAGE) Program is an innovative, instructional method that was implemented at the University of North Texas Health Science Center (UNTHSC) and Texas College of Osteopathic Medicine (TCOM). The SAGE Program

consists of an educational curriculum and community based outreach experience aimed at increasing student opportunity for early exposure to older adults and issues in geriatrics.

- **STEP:** Safe Transitions for the Elderly Patient (STEP) program at UNTHSC provides transitional care to more than 800 Tarrant County patients, consistently keeping 30-day readmission rates 40 percent or more below state and national averages and saving more than $350,000 annually in readmission costs. STEP serves a diverse patient population with individualized, comprehensive care that begins when a patient arrives home – care managed and coordinated by a home assessment and care team consisting of a nurse practitioner or physician assistant, physical therapist, social worker, pharmacist and physician.
- **Community Volunteering**: Faculty, staff and students clocked 60,829 hours in one year with organizations like Make a Wish, Habitat for Humanity, Tarrant Area Food Bank, and many more.
- Founding partner for Mayor Betsy Price's FitWorth, Health City Initiative and of the 40-year-old Cowtown Marathon.
- **Missing Person's Unit**: The nation's only academic center based lab that uploads genetic data to FBI's Combined DNA Index System (CODIS). Since 2003, UNTHSC has processed more than 5,200 human remains leading to 1,500 DNA identifications.
- **Science on Tap**: is a partnership between the Fort Worth Science and History Museum and the UNTHSC, which brings UNTHSC researchers to the museum to talk about their research in an entertaining and interactive learning and social event for adults.
- **Healthy Start**: is a Health and Human Services Administration (HRSA) funded home-visitation program offered through the Department of Pediatrics serving pregnant and parenting women and families. The focus on preventing infant mortality through asset-based education, access to health and social services and advocacy.
- **The Building Bridges Initiative**: funded by the Cancer Prevention and Research Institute of Texas (CPRIT) is a community-based outreach, education and preventive health screening program focused on refugee men, women and their families. Bi-cultural and bi-lingual health educators representing six different refugee groups/regions provide breast, cervical, liver and colorectal cancer prevention education and facilitates screenings in one of ten languages in the North Texas areas.
- **Healthy Moms-Healthy Babies-Healthy Community (H3):** is a community-based initiative focused on southeast Fort Worth. The mission is to reduce infant mortality by engaging individuals and communities to build a healthier Tarrant County. In short, the healthier a woman's life is – throughout her life – the healthier her pregnancy, and her baby, can be. Connecting community members to resources and support systems in their own community is one key factor in having a healthier Life Course.he mission is to reduce infant mortality by engaging individuals and communities to build a healthier Tarrant County.
- **Preconception Peer Education:** is a program of the Federal Office of Minority Health and funded by Texas Department of Health and Human Services. The program targets Texas college-aged men and women with a preconception life course program designed to build healthier lives and reduce infant mortality.
- **Mobile Vision Screening Program:** The Mobile Vision Screening Program checks preschoolers in North Texas for common vision problems including nearsightedness (myopia), farsightedness (hyperopia), astigmatism, amblyopia ("lazy eye"), and asymmetric pupil diameters. The hope is that by identifying and correcting vision problems early, students will have greater success in the classroom.
- **The North Texas Regional Institutional Review Board (NTR-IRB):** The North Texas Regional Institutional Review Board (NTR-IRB), located at UNTHSC, is a collaboration of UNTHSC and other regional hospitals and institutions, responsible for regulatory oversight and protection of the welfare and rights of individuals who are subjects of research. The NTR-IRB is a "community/regional" IRB designed to facilitate review of human medical research (broadly defined) and thus streamline the development and implementation of health research discoveries throughout the region.

The Texas College of Osteopathic Medicine

Texas College of Osteopathic Medicine (TCOM) is a leader in training physicians skilled in comprehensive primary care and rural medicine. Over 60 percent of TCOM's graduates practice primary care medicine, helping reduce the shortage of physicians in our Texas communities. Many others successfully practice in specialty careers ranging from aerospace medicine to cardiovascular surgery. From the first semester, students in the Doctor of Osteopathic Medicine program are placed in one of our primary care clinics to directly experience community health care and related issues. Students will continue the clinical phase of their medical education with core rotations in Internal Medicine, Surgery, Pediatrics, Obstetrics and Gynecology, Family Medicine, Psychiatry, Emergency Medicine and Geriatrics. TCOM excels through its innovative medical school curriculum, inter-professional education, cutting-edge research, quality patient care, and outstanding student performance in both the classroom and clinics. Whether they are the only doctor serving a rural community or a specialist at a major medical center, TCOM graduates distinguish themselves as clinical leaders, teachers and scholars. TCOM has four academic departments: Family Medicine, Internal Medicine & Geriatrics, Pediatrics and Medical Education.

The Texas College of Osteopathic Medicine's graduate medical education programs include two Dermatology Residencies (in Fort Worth and Houston), a Neuromusculoskeletal Medicine Residency, a Neuromusculoskeletal Medicine Plus One Residency, a Primary Care Sports Medicine Fellowship, and a Palliative Medicine Fellowship.

Research plays an important role in clinical and education practices. Between 20-25% of all TCOM students conduct an elective research project in the biomedical sciences, patient-oriented clinical studies or health services and policy during their four years at TCOM. Providing medical students with a meaningful research based educational experience is integral as medical students become exemplary physicians and informed consumers of medical research outcomes in the practice of evidence based medicine. Conducting a research project during medical school helps to build an academic track record strengthening residency applications and successful match for residency training. Under the direction of a faculty mentor, the research experience is often tailored to meet the student's interests. Options include a Pediatric Summer Research Elective, Honors Research Practicum, one month Research Elective, and Dual-Degree programs.

The Texas Center for Performing Arts Health, formerly known as the Texas Center for Music & Medicine, is an interdisciplinary partnership led by the UNT College of Music and the UNTHSC TCOM. It also includes collaborations with the UNTHSC SPH, the UNT Denton based Colleges of Engineering, and Public Affairs and Community Service. Faculty across the UNT Denton and UNTHSC campuses work together to study, treat, and prevent various occupational health problems associated with learning and performing music and other performing arts. Through these committed collaborations, students can enroll in specialized courses, select an optional related field of study in music medicine, participate in ongoing research and outreach initiatives, and pursue their own research projects. The center provides specialized clinical resources to both students and non-students. Clinical services for voice, musculoskeletal, auditory, and mental health concerns are available through the Music Medicine Student Clinic, and the Performing Arts Medicine Clinic at UNTHSC, as well as the UNT Denton's Counseling and Testing Center, and Speech and Hearing Center.

The Graduate School of Biomedical Science

The Graduate School of Biomedical Sciences (GSBS) of the UNTHSC, although young, has a strong record in graduate training. The mission of the Graduate School of Biomedical Sciences is to prepare graduates for careers as researchers, educators, and healthcare professionals through innovative training and research. Students can earn specialized master's degrees in Biotechnology, Clinical Research Management, Forensic Genetics, Medical Sciences, and Medical Sciences International. The GSBS offers traditional research intensive Master's and Doctoral programs in Biochemistry and Cancer Biology, Cell Biology & Immunology and Microbiology, Integrative Physiology, Genetics, Pharmaceutical Sciences & Pharmacotherapy, Pharmacology and Neuroscience, Structural Anatomy & Rehabilitation Sciences and the Visual Sciences. The graduate programs are designed with

an integrated, competency-based curriculum at its core that provides students with a broad foundation of knowledge in the biomedical sciences. Faculty research is funded by NIH, NSF, DoD, and private foundations. The GSBS also has several NIH funded academic programs that focus on the neurobiology of aging, health disparities, and cardiovascular disease.

The GSBS recognizes the importance of a diverse student population and research areas that derive from an understanding of all cultures. The GSBS has partnered with the Texas Center for Health Disparities to provide research and educational opportunities for students from traditionally underserved demographic groups. Importantly, GSBS has received a designation as a "Role Model Institution in the Training of Minority Biomedical Scientists" by Minority Access, Inc., a National Institutes of Health (NIH)-affiliated organization. In October of 2017 the school undertook a mass reorganization while at the same time making a change in leadership. As a result, three academic departments were created along with three areas of focus within the GSBS Administration which include Education, Student Services, and Research.

- **Department of Physiology and Anatomy**
- **Department of Microbiology, Immunology and Genetics**
- **Department of Pharmacology and Neuroscience**

The School of Public Health

The School of Public Health (SPH) was accredited by the Council on Education for Public Health (CEPH) in June 2002. Currently, the SPH has 30 faculty members and approximately 325 students. The School offers the following degrees: Master of Public Health (MPH), Master of Health Administration (MHA), Master of Science (MS) in Public Health Sciences with concentrations in Biostatistics, Epidemiology, or Health Behavior Research, the PhD in Public Health Sciences with concentrations in Epidemiology or Health Behavior Research as well as two dual degree programs: DO/MPH and MPH/MS in Applied Anthropology. The school also offers multiple graduate certificate programs. The SPH focuses on research that advances knowledge on the etiology of public health threats, and evaluates interventions and policies that prevent disease and promote health. The PhD curriculum provides advanced training in a specialized field of public health that is grounded in strong research methods. The Mission of the School of Public Health is to create solutions for a healthier community by advancing public health knowledge through research, service and the education of public health professionals. The SPH has two departments:

- The goal of the Department of Biostatistics and Epidemiology is to provide a collegial interdisciplinary learning environment that produces strong researchers and public health practitioners who use biostatistics, epidemiology, and environmental health theories, principles, and methods to significantly improve health at the population level. Graduates from the masters and doctoral programs have found employment in academia, public health departments, research organizations, and industry. The faculty in the Department have diverse expertise in areas such as healthy aging, cancer, quasi-experimental trial methodology, surveillance, vaccination programming, disaster preparedness, zoonosis, vector-borne diseases, and air pollution, as well as in the development of novel statistical methods applied to clinical trials, neuroimaging, survey sampling, genetics, and environmental monitoring.

  Biostatistics and Epidemiology Consulting and Collaboration Services (BECCS): provides statistical consulting services and trainings to researchers and practitioners through full collaboration with the Department faculty, staff, and graduate students. The Department has 15 fulltime faculty members with a wealth of experience in academic research, public health practice, and professional consultation. The ultimate goal is to contribute to the University's research and educational mission through a fruitful partnership with colleagues within and outside UNTHSC. Services include, but are not limited to, support for study design, statistical planning, data management, statistical analysis, statistical reporting, as well as training sessions/courses in biostatistics and epidemiology.
- **Department of Health Behavior and Health Systems:** The goal of the Department of Health Behavior and Health Systems (HBHS) is to help students develop the expertise to effectively

engage communities and health systems in improving policy, management, and public health practice. Graduates assume positions in healthcare, business, human services, research, and academic settings. Masters and doctoral programs are delivered by experienced faculty who use engaging, innovative teaching methods. HBHS faculty are also widely recognized for their impactful research. Their work has been funded by the National Institutes of Health, Centers for Disease Control, National Science Foundation, and many other national, state and local agencies. Faculty are widely published in the areas of patient safety, disease control, health disparities and underserved populations, women's and children's health, participatory research, substance abuse prevention, and online/m-health interventions. HBHS faculty have received national and international awards for their work bridging teaching, research and practice.

School of Health Professions

The School of Health Professions (SHP) delivers the knowledge, attitudes and skills necessary to serve in the health care professions as well as offering current health care professionals the opportunity to further their career development. Careers as either a physician assistant (PA) or a physical therapist (PT) are among the most rewarding and needed of all the health care professions. Classes in both PT and PA programs include inter-professional experiences designed to prepare students to be contributing members of the healthcare team. In addition, our Graduate Certificate in Lifestyle Health is designed for health care professionals and full-time students who have direct contact with patients and clients. The program includes an introduction to lifestyle health, assessing client readiness for change, the role of nutrition in health and managing chronic diseases, physical activity, smoking cessation, stress management and sleep habits.

- **Department of Physician Assistant Studies:** The mission of the Department of Physician Assistant Studies is to create solutions for a healthier community by preparing graduates with the knowledge and skills needed for physician assistant practice, emphasizing primary care medicine and meeting the healthcare needs of underserved populations. The program is approximately 30 months in length, and upon successful completion, graduates receive a Master of Physician Assistant Studies (MPAS) degree from the UNTHSC. The curriculum is divided into pre-clinical and clinical phases. The preclinical phase consists mostly of classroom studies, however introductions to clinical experiences, medical interviewing, physical examination and critical thinking occurs from the very first semester. The clinical phase involves sending PA students to clinics and hospitals located throughout Fort Worth, Texas and beyond. In these hands-on environments, faculty and adjunct faculty work with students to develop clinical skills under close supervision.
- **Department of Physical Therapy:** The Doctor of Physical Therapy (DPT) degree offers a well-rounded education in all aspects of contemporary physical therapy. The 33-month program prepares students to practice as a DPT, one of today's fastest growing and most rewarding health professions. The mission of the Department of Physical Therapy is to create solutions for a healthier community by producing highly qualified entry-level DPTs, and leading in education, professional services, and research activities. A core component of the department of physical therapy mission is to participate in research and service which impacts physical therapy practice. Faculty have been effective at building a network of collaborators with complementary and synergistic research interests, from departments within the UNTHSC, as well as from other universities, hospitals and industry. Two laboratories on campus utilize multiple technologies including a V-Gait CAREN System, motion analysis system, eccentric ergometer, transcutaneous stimulation of nerve and muscle tissue, mobile eye-tracking, BioSway balance testing system, custom-built pressure-shear platform, infrared thermal camera, in-shoe pressure measurement system, electronic timing gate system, biothesiometer, temperature data recorder and heat transfer and thermal management. Manual therapy tables are also available for use with OMT/PT treatment protocols.

The Human Movement Performance Laboratory occupies 2,300 square feet of space with support staff offices for a full-time research associate and a project coordinator who support the activities within the lab. This lab strives to understand the mechanisms underlying functional differences in movement, to develop new interventions to overcome the challenges of developmental disorders, disabilities, injury, illness or development/age-related health conditions and to offer the possibility of active, independent and more productive lives through research, education and clinical care. The laboratory is equipped with a motion analysis system for kinematic testing of normal and pathological motion, force plates for measurement of center of pressure, and computational facilities for creating patient-specific models and simulations. The V-Gait CAREN system including a dual-belt instrumented treadmill with visual display and capabilities to deliver 2 degrees of freedom perturbation has recently been acquired and will provide the necessary tools to create and test human movement and posture in virtual environments.

The Functional Mobility Assessment Lab is approximately 500 square feet of space that is equipped with a 10-foot long computerized walkway which allows researchers to assess gait parameters and force from each foot. Researchers can view real-time gait parameters and pressure distribution of the two insole sensors at the same time (left & right foot) and record the same information for playback and analysis. The portable near-infrared spectroscopy system is a non-invasive instrument that permits researchers to measure local tissue oxygen saturation in brain tissue and skeletal muscles. A newly installed solo-step rehabilitation support system (ceiling track and harness) enables the evaluation of subjects who may demonstrate unstable gait or poor balance during assessment.

The UNT System College of Pharmacy

The UNT System College of Pharmacy (SCP), the newest established academic unit at UNTHSC, graduated its first class in 2017. The SCP educates students to become highly competent pharmacy professionals for the provision of pharmacist-delivered patient care, including comprehensive medication therapy management services, the advancement of the practice of pharmacy and its contributions to society. This school strives to produce Pharmacy professionals who fully understand the contributions to health care of other health professionals, who embrace and can function in a team approach to health care, and who can serve as effective partners in providing primary care services to improve the health and wellbeing of their patients. The SCP also conducts and disseminates research that improves the maintenance of health and delivery of healthcare in Texas and beyond. The SCP has two departments, the Department of Pharmaceutical Sciences and the Department of Pharmacotherapy. Degrees offered include Doctor of Pharmacy (PharmD), Graduate programs in Pharmaceutical Sciences and Pharmacotherapy (MS/PhD), Dual degrees such as PharmD/PhD, PharmD/MS and PharmD/MPD, Pharmacy Residency Programs and a Pharmacy Resident Teaching Certificate Program.

Preclinical Services, part of the SCP, collaborates with academic and pharmaceutical scientists from around the world to evaluate and develop new therapies against infectious and other diseases. Preclinical Services specializes in in vivo efficacy models of infection, PK/PD analysis, bioanalytical assays, basic toxicology, and in vitro studies. There are also oncology and other models available or under development to support similar studies in noninfectious diseases.

With a focus on improving access for patients, students are trained in a team environment with a variety of health care professionals. Through disease and medication management, safety will be increased improving outcomes and reducing costs. The faculty, postdoctoral associates, graduate students, and research staff develop new and more effective therapies for the promotion of health and treatment of disease.

The TCU and UNTHSC School of Medicine

TCU and UNTHSC joined together in July 2015 to create Fort Worth's first MD school, which is

expected to accept its initial class of 60 students in 2019 and expand over time to an enrollment of 240. It will be among the leading institutions in the nation in providing a team-oriented, educational approach that benefits patients and shapes the future practice and business of medicine. Faculty and staff are developing an innovative curriculum aimed at training empathetic scholars which uniquely positions the organization to radically transform medical education, improving care for future generations. The MD school is expected to increase educational and research opportunities at the two institutions, while preparing the next generation of physicians to meet health care needs in Texas and beyond. Using existing educational, research and training facilities, along with faculty at both TCU and UNTHSC, allows start-up costs to be minimized and privately funded.

Stuart D. Flynn, MD, was hired in April 2016 as the founding dean of the new School of Medicine. He most recently served as founding dean of the University of Arizona College of Medicine – Phoenix. Previously, he was a professor of pathology and surgery at Yale University School of Medicine as well as an accomplished researcher, director of the residency program, a leader in the design and oversight of the school's curriculum, and founding member of The Society of Distinguished Teachers at Yale. Flynn received his medical degree and residency training from the University of Michigan and completed a fellowship in oncologic pathology at Stanford University.

The MD program is an extension of the two universities' longstanding collaboration on science and health care issues affecting the Fort Worth community. To date, more than 1,200 students from nursing, speech-language pathology, social work, athletic training, medicine, pharmacy, physical therapy, physician assistant studies, public health and biomedical sciences have trained together on interprofessional education competencies. Existing collaborations include a range of programs that focus on everything from a community-based outreach program for older adults to a culinary medicine approach that explores everyday recipes for better health. Students in the MD school will be enrolled in both institutions with both TCU and UNTHSC faculty teaching in the program. A dean named jointly by TCU and UNTHSC will report to provosts at both campuses. Moving forward, a medical school management committee including representatives from both universities, along with the new dean and provosts from both institutions, will oversee plans for the new school. *Currently a candidate for LCME accreditation and SACSCOC approval.*

Health Institutes and Centers

Institutes are an integral part of the UNTHSC research infrastructure.

- **Institute for Healthy Aging (IHA):** The Institute for Healthy Aging (IHA), led by Dr. Meharvan Singh, was established in September of 2015, and represents an expansion of what was formerly, the Institute for Aging and Alzheimer's Disease Research (IAADR, established in 2001). The IHA is comprised of faculty researchers from a wide range of disciplines (neuroscience, psychology, medicine, epidemiology, biostatistics, public health), engaged in basic "bench-top" science, clinical research, community-based research and clinical trials that address important public health issues that include neurodegenerative diseases such as Alzheimer's disease. Researchers not only investigate fundamental mechanisms of biological aging, with a particular focus on brain disease and injury, but are also engaged in the development of personalized (or person-focused) medicine for neurodegenerative diseases such as Alzheimer's disease. The IHA also maintains state-of the-art basic and preclinical science facilities and supports distinguished faculty with research programs targeting neurovascular disease and stroke, Alzheimer's and Parkinson's diseases, neuropsychiatric disorders and substance abuse. The IHA has extensive interactions with the other health institutes and collaborates with the Graduate School of Biomedical Sciences by sponsoring graduate training programs in the basic neurosciences, the neurobiology of aging, and pharmacology, which take advantage of strong research programs in the disciplines of molecular pharmacology, neuroendocrinology, and the biology of aging. Of particular note is the strong relationship of the IHA with the Center for Geriatrics, whose faculty consist of board-certified geriatricians, physicians with certificates of added qualifications in Geriatrics, specialized nurse practitioners, psychologist and social service coordinator, who are all committed to

improving the physical and mental function of our patients, with a focus on improving and maintaining their quality of life.

The Brain Bank, as part of the IHA, was established to aid researchers in the advancement of knowledge and understanding of Alzheimer's Disease and related dementias. The Brain Bank serves as a repository of pathologically characterized brain tissue from donors who were "cognitively intact" as well as those diagnosed with dementia, Give that dementing processes can only be understood by comparing brains of individuals with degenerative neuropathology to those without, there is continued effort to enroll those whose cognitive function is intact in addition to those with evidence of cognitive impairment. The gratitude of the IHA to those who donated their brains to research cannot be over-stated. It is through analysis of such tissue that our researchers will develop a better understanding of the cellular and molecular changes that occur in neurodegenerative diseases and provide insight into the development of new diagnostic methods and therapeutic strategies.

- **North Texas Eye Research Institute (NTERI)**: NTERI is changing the world with new discoveries through basic and clinical eye research. Since 1992, our researchers and clinicians in the field of visual science and ophthalmology have been driven to increase awareness about disease development and the need for novel therapies, especially among ethnic and minority populations who have or will develop debilitating vision disorders and related health disparities. NTERI's mission is to initiate and facilitate collaborative projects in vision research, develop innovative multidisciplinary graduate training programs, engage and inform the community on the importance of eye diseases and vision research and attain research outcomes that will lead to the development of new and effective treatments for ocular diseases, including glaucoma, macular degeneration, diabetic retinopathy, optic neuritis, and dry eye disease.
- **Center for Human Identification:** The University of North Texas Center for Human Identification (UNTCHI) is an accredited forensic laboratory which is globally recognized as a leader in forensic identification. Located on the campus of the UNTHSC in Fort Worth, Texas, UNTCHI services include forensic genetic and anthropological examinations for criminal casework and missing persons identification, local CODIS operations, and development and management of the National Missing and Unidentified Persons System (NamUs) for the US Department of Justice. UNTCHI also is committed to the training of students and professionals in various aspects of forensic genetics and maintaining an active, innovative research program to improve forensic identification capabilities. Interdisciplinary expertise in forensics, genetics, genomics, microbiology, molecular biology, anthropology, bioinformatics and other related disciplines are available within UNTCHI to support its mission.

  With funding support from the State of Texas and various Federal Government agencies, UNTCHI continues to support forensic DNA testing. To date, UNTCHI has processed the majority of missing person samples for the United States that reside within CODIS. UNTCHI also has been instrumental in decreasing sexual assault and criminal casework backlogs within Texas. In addition to forensic and missing person DNA services, UNTCHI provides anthropological examinations of skeletal remains to determine gender, ancestry, age, stature, possible signs of trauma and if the remains are of forensic significance. Since 2011, UNTCHI has managed the NamUs program, which consists of a central on-line repository of information related to missing and unidentified decedent cases that serves law enforcement, medical examiners, coroners, and the general public. Regional Service Administrators located throughout the US work closely with agencies and families with missing loved ones in an effort to exchange information and potentially resolve missing persons cases. The scientists at UNTCHI are recognized subject matter experts that often are called upon to assist in various investigative needs such as reduction of laboratory backlogs for the State of Texas, casework interpretation, testimony support, and development of software and databases to assist investigators nationwide as well as internationally. Active research efforts support the service work at UNTCHI and are collaborative with scientists from around the world. In the past several years, UNTCHI has published more than 120 peer-reviewed publications related to forensic genetics in the areas of human identification, microbial forensics,

and molecular autopsy. Most of the mentored Masters and Doctoral students involved in the research continue on to active, successful careers.

- **Center for Anatomical Science (CAS):** The CAS maintains a state-of-the-art human anatomy laboratory as well as a bio-skills research facility for education and training of local residents and clinicians in new ultrasound, orthopedic, and surgical techniques. The CAS graduate programs (M.S. and Ph.D.) provide opportunities for our graduate students to pursue research in structural anatomy and biomechanics as applied to biological anthropology, rehabilitation sciences, orthopedics, and/or the scholarship of anatomy education while providing quality outreach programs in the Fort Worth ISD and surrounding Tarrant County area.
- **Texas Center for Health Disparities (TCHD):** In comparison to the general population of Texas, racial and ethnic minorities suffer from heightened risk factors and poorer overall health and access to health care. The mission of the TCHD is to prevent, reduce and eliminate health disparities in our communities. Historically, academic institutions have conducted research in communities but not necessarily *with* communities at risk for disease. By working with key community members, prevention research can be translated into actions that will drive improvement in areas such as diabetes, cardiovascular diseases, cancer, stroke and HIV. TCHD is committed to increasing the underrepresented minority student and faculty population and offer an innovative fellowship program that fosters collaborative research among junior research faculty and community leaders and stakeholders. By leveraging UNTHSC's community partnerships, it works to improve prevention and outreach efforts affecting women in underserved and low-income communities in North Texas. Current efforts are focused on obesity and cancer. Established in 2005, the Texas Center for Health Disparities is designated as a Center of Excellence by the NIH.

UNTHSC Research and Research Resources:

The UNT Health Science Center is providing a healthier future for a changing world with new discoveries through research. Our internationally-known faculty researchers are exploring new approaches to the treatment of disease, including Aging and Alzheimer's Disease, Primary Care and Prevention and Investigative Genetics. Sponsored Research expenditures has grown to exceed $50 million. The UNTHSC is committed to excellence and success in biomedical research.

The Division of Research and Innovation

The mission of the UNTHSC Division of Research and Innovation is to assist all components of the Health Science Center in identifying research opportunities, securing support, overseeing research and insuring research and funding policy compliance. The Division consists of two units, Research Administration and Research Development & Commercialization which support and serve all UNTHSC faculty, staff and students.

Reseach Administration:

- **Office of Sponsored Programs:** This office provides pre-award, post-award, and accounting services for the support of faculty and other investigators while promoting compliance with federal and state agencies, private sponsor agreements, and UNTHSC research policies.
- **Office of Research Compliance**: The Office of Research Compliance works with offices responsible for specific components of research compliance and university research oversight committees such as the Institutional Review Board, Institutional Biosafety, Institutional Animal Care and Use, and the Financial Conflict of Interest committees to ensure the responsible conduct of research and compliance with university policies and federal regulations related to research activity. The office oversees development and implementation of policies, procedures, and educational activities which satisfy university policies, state, and federal regulations governing the conduct of research. The Office of Research Compliance is responsible

for monitoring regulatory updates and making recommendations to the university to ensure compliance.

Research Development & Commercialization:

- **Technology Commercialization:** educates faculty about Intellectual Property (IP) and commercialization, evaluates technology for patentability and commercial potential, protects IP, and reaches out to industry partners with the potential to license and commercialize UNTHSC technology.
- **Research Development**: Research Funding Development provides management of intramural grant programs, external funding sourcing through Pivot, Elsevier Pure faculty expertise database and grant writing workshops.
- **Innovation Ecosystems:** The UNTHSC is an integrated partner with the City of Fort Worth's Incubator- TECH Fort Worth. TECH Fort Worth is a non-profit organization that has been helping entrepreneurs launch and grow emerging technology companies since 1998. They identify entrepreneurs and startup companies with technologies that have a high potential for success in the marketplace and mentor, coach, and relentlessly push them toward success.
- **Core labs & Infrastructure:** The UNTHSC houses three specialized core facilities covering Microscopy, Flow Cytometry and Fluorescence Technology and Nanomedicine as well as two general use core laboratories, the Discovery Centers. Each core is managed by knowledgeable staff capable of training and guiding users along their research journey.

  Microscopy: This core provides the equipment necessary to prepare samples for microscopic analysis using confocal, total internal reflectance fluorescence, and transmission electron microscopy. Confocal microscopy is available for live and fixed samples with live-scan heads and incubation modules.

  Flow Cytometry and Laser Capture: This core provides cutting edge instrumentation for cell sorting, cell counting, laser capture microdissection and in vivo imaging as well as animal blood analysis.

  Center for Fluorescence Technologies and Nanomedicine: The Center for Fluorescence Technologies and Nanomedicine includes three spectroscopic laboratories, a protein chemistry laboratory, a peptide and organic chemistry laboratory, a muscle research facility and two prep rooms. Rapid developments in nanomedicine and fluorescence technologies represent an extraordinary opportunity for scientific advancement. Research at the atomic, molecular, and supramolecular level can lead to earlier and more precise diagnosis, advanced drug delivery systems, new therapies, and more.

  Discovery Centers: These two laboratories contain general purpose as well as some specialized molecular biology laboratory instrumentation in addition to providing research bench space. These are each offered on a fee-free basis to researchers, clinical faculty and start-up companies enrolled in the UNTHSC's commercialization program. These labs provide shared laboratory space and general laboratory instrumentation.

  Acceleration Lab: The Acceleration Lab at the UNTHSC is a commercialization initiative that provides a wide range of support services for emerging companies working to bring new technologies to market. The Acceleration Lab, and the UNTHSC partnership with TECH Fort Worth, is supported in part by grant funding from the State of Texas.
- **Laboratory Animal Medicine**: UNTHSC's Department of Laboratory Animal Medicine (**DLAM**) provides professional and technical service for Laboratory Animal Care, Veterinary Medical services, and Animal Research Project support for faculty, students, and employees of UNTHSC. Their staff is trained in the care and use of laboratory animals and plays an important role in research on campus. All DLAM staff working with animals are AALAS (American Association for Laboratory Science) certified. Further, DLAM and the Institutional Animal Care and Use Committee (IACUC) are strong collaborative partners in animal research, and routinely receive high marks from the main accrediting body for animal research: the Association for Assessment and Accreditation of Laboratory Animal Care (AAALAC).

Responsible Conduct of Research

Instruction in the responsible conduct of research is mandatory and a high priority at our institution. To that end, several review committees are in place to assure that research carried out at the UNTHSC is in compliance with governing University and Federal regulations:

- **The North Texas Regional Institutional Review Board (NTR-IRB):** The North Texas Regional Institutional Review Board (IRB), a collaboration of UNTHSC and other regional hospitals and institutions, is responsible for protecting the welfare and rights of individuals who are subjects of any research, whether funded or unfunded, conducted by UNT Health Science Center faculty, staff, or students. The IRB reviews and approves all research involving human subjects. Research involving human subjects cannot be conducted without the approval of the NTR-IRB. The Federal Wide Assurance number is 00005755. Federal guidelines for the conduct of research involving human subjects are provided by the United States Department of Health and Human Services and all members of the NTR-IRB are in compliance with 45 Code of the Federal Regulations section 46.107 regarding gender and diversity. The NTR-IRB reflects maturity, experience, and expertise to insure the rights and welfare of human subjects are protected. The NTR-IRB, in accordance with a federal regulations, ensures that all persons who are responsible for the design and conduct of a study complete educational training on the protection of human subjects. Further, the University is a member of the SMART IRB Reliance Agreement and has several reciprocity arrangements with other universities and institutions throughout North America.
- **Institutional Animal Care and Use Committee:** The IACUC is a research oversight committee charged with the responsibility of ensuring the proper care and use of animals in research, testing and education. The IACUC also provides assistance to investigators in fulfilling their obligation to plan and conduct animal experiments in accordance with the highest scientific, humane, and ethical principles.
- **The Institutional Biosafety Committee:** The IBC advises on matters relating to the safe use and handling of biological materials, including recombinant DNA molecules, on the UNTHSC campus. The IBC reviews and approves all research involving biological hazards, including recombinant DNA. Research involving biological hazards cannot be conducted without the approval of the IBC. The IBC is duly constituted and is a standing committee managed through a partnership of the Division of Research and Innovation and the Office of Environmental Health and Safety. Federal guidelines for the conduct of research involving biological hazards are provided by the United States NIH, and all of IBC members are in compliance with the 45 Code of the Federal Regulations section 46.107 regarding gender and diversity.
- **Research Conflict of Interest Committee:** The term “research conflict of interest (RCOI)” refers to situations in which financial or other personal considerations may compromise or have the appearance of compromising a researcher's professional judgment in conducting or reporting research. Federal regulations, state laws and University policies recognize that researchers may have financial interests in research sponsors and/or in entities with business interests closely related to their research. UNTHSC is committed to ensuring an open and productive environment in teaching, patient care, and research. However, the ever-increasing complexity of our society and the various relationships between researchers and outside institutions require attention to ensure the avoidance of real or apparent conflict of interest issues. The Office of Research Compliance provides necessary training to understand and report real or perceived RCOIs. A RCOI Committee reviews all statements and works with the faculty, staff, or student member to develop a RCOI management plan when necessary.
- **Institutional Compliance and Integrity:** The Compliance Program at UNT Health Science Center ensures that all personnel conduct their business, research, educational and service activities with complete adherence to all statutory requirements and at the highest levels of ethical behavior. The Program is designed to enhance employee, student, business associate and patient/client awareness of the expectation of ethical behavior, and to facilitate the reporting of suspected breaches of conduct and/or noncompliance. Students, employees, patients and others may address a compliance concern the following ways: Discuss it with your Supervisor or Advisor, Speak to the

Chief Compliance Officer, 817-735-5131, Seek guidance or file a report on the UNTHSC Trust Line (formerly the Ethics Hotline).

- **Safercare Texas:** Committed to creating a new culture of safety in health care for Texas by challenging traditional thinking to eliminate preventable harm, SaferCare Texas is focused on reducing medical errors and assuring Texans receive the highest quality of health care through extensive education, community outreach initiatives and quality improvement programs.

Other University Resources

- **Gibson D. Lewis Health Science Library**: The library supports the educational, research, patient care, and community service missions of the UNTHSC by meeting the information needs of faculty, students, staff, and the local health sciences community. The library provides a full complement of services, including access to scholarly bibliographic resources, borrowing privileges, use of individual and group study areas, photocopying and printing, document delivery/interlibrary loan, expert instruction in the use of information resources, and access to professionally trained librarians for reference and literature search assistance. The library also offers two computer labs outfitted with up-to-date hardware and software used in both teaching and research on campus.

  Lewis Library's staff of 29 FTE employees, including 16 professional librarians, provides in-person assistance for 109 hours per week. Each of the library's three floors is available for student and faculty use 24 hours a day, 7 days a week. The library's scholarly collection contains approximately 11,000 electronic journals, 14,700 print and electronic books, and 119 searchable databases in the biomedical sciences, clinical medicine, public health, and affiliated fields. All electronic resources can be accessed through the Lewis Library web site at http://library.hsc.unt.edu and are available to UNTHSC students, staff, and faculty from anywhere in the world at any time of the day and night.

  Lewis Library also maintains the UNTHSC Scholarly Repository, an online resource that preserves intellectual works created by UNTHSC faculty, staff, and students and enables discovery of these works to the international scientific community. You can view repository items, including student theses and dissertations, at http://digitalcommons.hsc.unt.edu/. In addition to working on the cutting edge of digital content creation and preservation, Lewis Library operates a special collections operation consisting of a rare book collection and a functioning archive operation. These print-based collections give users the opportunity to access historical material in osteopathic and physical medicine and items related to the founding and operation of the TCOM and the UNTHSC.

  Lewis Library uses an online system from SirsiDynix to acquire, process, and provide access to its collections. Students and faculty may obtain books and journals not owned by the library using the ILLiad web-based order and delivery system. Lewis Library has been a resource library in the National Network of Libraries of Medicine since 1991 and is also a member of the South Central Academic Medical Libraries Consortium, a group of 16 academic medical/health science center libraries in Texas, Arkansas, Louisiana, Oklahoma and New Mexico. Additionally, the library participates in TexShare, a state of Texas cooperative library program. TexShare allows UNTHSC students, staff, and faculty physical access to and borrowing privileges from all public libraries as well as various public and private institutions of higher education in Texas. As a member of the University of North Texas System, the library is able to gain access to a wide array of electronic resources outside the health sciences. The library's participation in these collaborative endeavors ensures that UNTHSC students and faculty have access to the world of information beyond the walls of Lewis Library.

  Lewis Library has been the home of the Regional Medical Library (RML) for the South Central Region of the National Network of Libraries of Medicine (NN/LM SCR) since May 2016. The library's service as the RML is based on a NIH award, Cooperative Agreement 1UG4LM012345-01. As a unit of the National Library of Medicine, the NN/LM SCR aims to advance the progress of medicine and improve public health through increased access to health information within the states of Arkansas,

Louisiana, New Mexico, Oklahoma, and Texas. The RML extends the services and programs of the NN/LM and the National Library of Medicine by partnering with health information agencies and organizations, public health entities, community based organizations, libraries, and the general public to offer outreach, funding opportunities, and educational programming throughout the region.

- **Information Technology Services:** Provides innovative and customer-focused information technology and services to advance UNTHSC's strategic focus of People and Values, Learning and Discovery, Quality (outcomes and experience), and Growth and Finance.
  - **Classroom and Events Technology Support (CETS)**- provides audio-visual and related support for the technology in the classrooms and special events both, on and off campus. Offers full classroom technology support including all audio/visual equipment and related services, as well as consultation, equipment rentals, project management and event support
  - **Helpdesk and Client Services**- is the first point of contact for any computer or mobile device matters from computer installations, repairs, and to moves. The customer support team works with other ITS areas on technology projects and roll-outs. Student computer technicians are also responsible for the support of various laptop and mobile device programs.
  - **Copier/ MFD Services** – Supports and manages UNTHSC's leased copiers and multi-function devices (MDF) fleet by providing equipment, support, and supplies.
  - **Telecommunications-** Provides telecommunication management and services (as appropriate) to faculty, staff, students, patients and the general public; provides technical guidance and support for telecommunication programs; provides end-user training and to assistance in the use of telecommunication products throughout UNT Health Science Center.
  - **Information Security Office(ISO)**- assures the security and protects the confidentiality, integrity, and availability of Health Science Center information resources. The ISO collaborates with institutional IT leadership, audit, compliance, and legal departments to support the institution's education, research, and healthcare missions.
  - **Product Development and Engineering-**provides early feedback about the technology aspects of an idea, the plan and the budget. Armed with the preliminary plan, a process of creating software in iterations will build products incrementally until they are ready to be delivered.

- **Electronic Laboratory Notebook**: The UNTHSC subscribes to the Enterprise Edition of the electronic laboratory notebook (ELN) platform, LabArchives (www.labarchives.com) which provides unlimited, secure data storage to all UNTHSC employees. This cloud-based ELN provides real-time 24/7 access to easily create, store and manage data while at the same time allowing secure sharing of data within and outside of the UNTHSC. With this feature, LabArchives provides an easy avenue for compliance with funding agencies' data management plan requirements. There is a complete audit trail for all entered information, as no entries can be deleted, and all updates are automatically time stamped and attributed to the user making the update. LabArchives servers are kept in a secure, primary data center with a separate, disaster recovery data center thousands of miles apart. Finally, all data entered into LabArchives can be retrieved or archived in HTML or PDF formats for additional back-up or transfer with a researcher to a new institution.
- **INCEDO:** Within UNTHSC lies a center that serves a truly unique purpose — to connect the colleges, providers, and administrators to outcomes-driven continuing educational solutions. INCEDO consistently uncovers new ways to engage and enlighten providers, researchers and leaders to continuing education, community programs and internal collaborations that focus on improving quality across the organization through meaningful, measurable impact. This office collaborates to inspire and innovates to drive outcomes. INCEDO is nationally accredited by the Accreditation Council on Continuing Medical Education (ACCME) and the American Osteopathic Association (AOA) -- one of a handful of providers in the country to hold the distinction of maintaining dual accreditation. In fact, each year INCEDO registers more than 12,000 healthcare professionals at more than 500 activities each year. UNTHSC's INCEDO is a national leader in continuing education and has a proven track

record of improving competence and performance of healthcare professionals, leading to improvements in patient health and community health outcomes.

- **The Center for Innovative Learning (CIL):** The CIL offers a wide variety of services to assist in creating excellent teaching and learning at UNTHSC by helping educators interact with each other and through innovative teaching and learning to inspire student success. The UNTHSC Center for Innovative Learning Mission is to advance transformative educational experiences. The main areas of focus are:
  - **Canvas**, the learning management system at UNTHSC, is maintained by the CIL.
  - **Instructional design and technology** staff will develop creative, meaningful instruction using effective practices in course design.
  - **Multimedia production** - We assist faculty with audio, video and multimedia project support.
  - **Faculty Professional Development** includes development, training and events on teaching and learning topics of all kinds.

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