

RESOURCES & ENVIRONMENT TEMPLATE

How to use this document: The information below is intended to provide a limited amount of background information for grant applications, and should not be considered an exhaustive list. Investigators intending to use the information should ensure all data is up to date before including in their application(s), and are encouraged to contact the resources listed as appropriate for the requirements of their application.

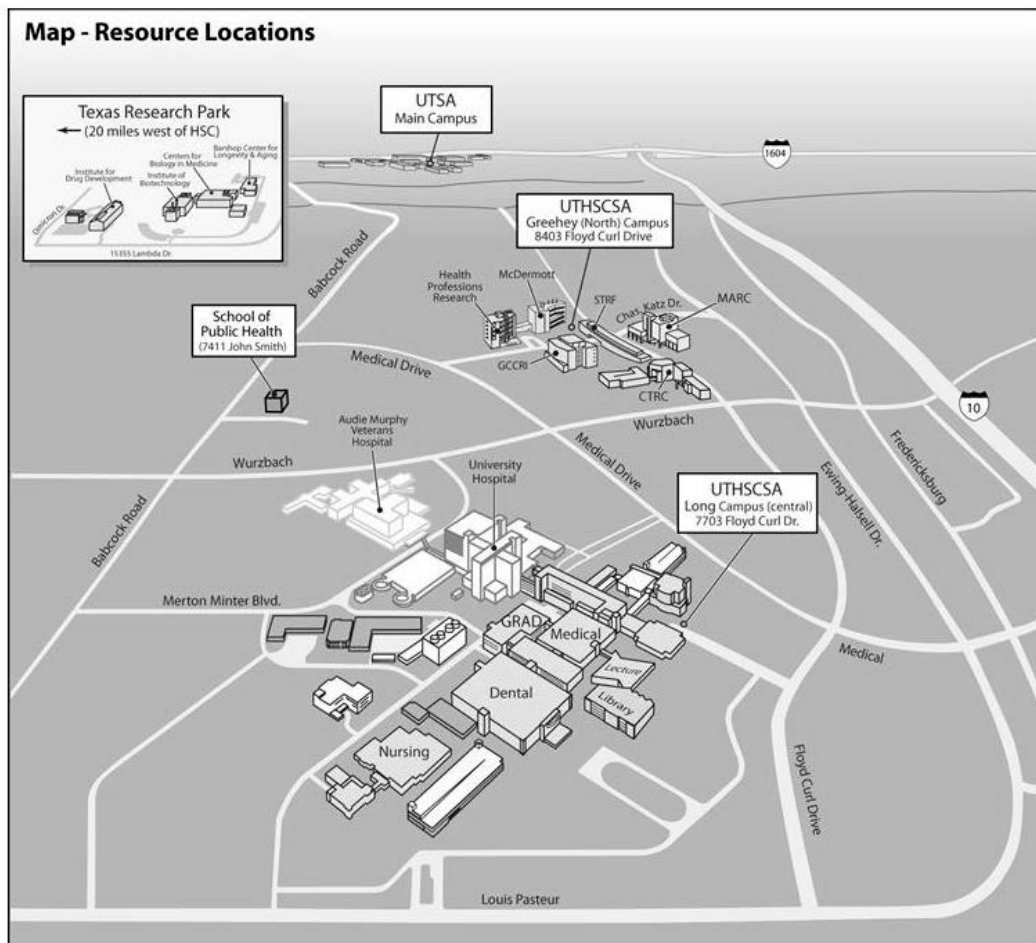
UTHSCSA

The University of Texas Health Science Center San Antonio (UTHSCSA), one of 14 components of the University of Texas (UT) System, comprises five schools: Medical, Dental, Nursing, Health Professions, and Graduate School of Biomedical Science. It is the primary training site for health professionals serving the South Texas region. In the almost 50 years since its founding, UTHSCSA has grown to be a major education and research institution. The UT Health Science Center, designated a Hispanic-Serving Institution by the US Department of Education, is the only tier-one research institution in South Texas, with total research awards in FY2016 of \$100M and expenditures of \$95M, of which \$86M was federal (\$65M NIH). Clinical trials revenues were \$9M. In addition, the VA Medical Center has research grant portfolio of ~\$12M. Currently, the UT Health Science Center ranks in the top 13% of all institutions receiving NIH funding. Because of its long-standing partnerships and productive relationships, the Health Science Center is a chief catalyst for San Antonio's \$30.6B biosciences and health care industry, which is growing about 6% annually. Enrollment in the five UTHSCSA schools (Fall 2016) totals 3,250 students, who are taught by 1,710 full-time faculty. Among the faculty in all five schools, 35% are primarily engaged in research. In 2016, there were 335 faculty with 623 extramural grants. UTHSCSA is ranked first in Texas, and among the top 5 in the nation, for research funding from the National Institute on Aging, 12th in NIH funding for Departments of Pharmacology, and in the first quartile of NIH funding for several other departments. The University of Texas System ranks 4th globally for number of US patents issued.

South Texas

South Texas is comprised of 38 counties, including the US-Mexico border region, and has a service area comparable to the State of Ohio. According to Census data (pulled October 2014), 19 of the 38 counties have population densities of less than 30 persons per square mile and 36 of the counties are designated as Medically Underserved Areas by the Health Resources and Services Administration (HRSA). The South Texas population experiences disproportionate rates of diabetes, obesity, certain cancers, and other health conditions that are exacerbated by lack of health insurance, as Texas has the highest proportion of uninsured residents in the nation, and limited access to health care; According to the US Census (pulled November 2017), San Antonio is the 7th largest city in the US and, with 63% of the population identifying as Hispanic, is a minority-majority city. The city is also home to seven US Department of Defense installations, including San Antonio Military Health System (SAMHS), the largest military medical system in the world. SAMHS is responsible for the health care of Department of Defense (DoD) beneficiaries in the Central and South Texas region, as well as specialty care for the entire DoD system; not surprisingly, San Antonio is nicknamed "Military City, USA." South Texas' stressed health care infrastructure necessitates highly effective, practical approaches to improving outcomes, in the face of resource limitations. The socio-economic status and health disparities present in our region present both challenges and opportunities for medical research that are relevant and important to the health and welfare of the entire US. The unique combination of our regional demographics,

strategic partnerships, and distributed facilities provide UTHSCSA with key resources for being a national leader in clinical and translational research on Hispanic, military, and veteran health issues—in many ways, we are testing ground for future health issues across the USA.





Underrepresented groups:

UTHSCSA is a Department of Education Designated Hispanic-Serving Institution, with a faculty makeup that is ~15% Hispanic, reflecting the demographics of the South Texas Region. More than half (60%) of UTHSCSA's total enrollees are women and 58% of students are from ethnically diverse groups. Hispanics account for 29% of students, Asians 13%, African Americans 5% and Other (Native American, Pacific Islander/Hawaii and students with 2 or more races) 3.5%. In 2014, UTHSCSA's School of Medicine was named as the best medical school for Hispanics in the annual diversity report of HispanicBusiness.com In 2013, UTHSCSA researchers worked with the Texas Department of State Health Services to create and publish the *South Texas Health Status Review*. This document highlights the disparities facing the Health Science Center's service region. The diversity in gender and ethnicity carries beyond the student population, to graduate medical education trainees (41% women, 21% Hispanic) and post-doctoral fellows (46% women, 14% Hispanic). UTHSCSA's major clinical affiliates are University Health System (UHS) and South Texas Veterans Health Care System (STVHCS). The aerial view of the **South Texas Medical Center** (above) shows the location of UTHSCSA's Main Campus (upper right) and Greehey (North) Campus (foreground), as well as CTSA/IIMS partners University Hospital (UHS facility, adjacent to the Main Campus), and the Veterans

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Administration Medical Center (just at the right-hand edge of the photo adjacent to University Hospital). Also pictured are the South Texas Research Facility (STRF, administrative home of IIMS/CTSA), Medical Arts and Research Center (UT Medicine faculty practice ambulatory home and clinical research unit), the Center for Oral Health Care and Research (Dental School faculty practice and clinical research unit), Cancer Therapy and Research Center (CTRC, NCI-designated cancer center), Greehey Children's Cancer Research Institute (GCCRI), Research Imaging Institute, and the Research Administration Building (housing Office of Sponsored Programs, Clinical Research Office, Clinical Trials Office, Office of IRB, and Office of IACUC).

UTHSCSA Clinical and Translational Science Award (CTSA): In 2006, UTHSCSA established the Institute for Integration of Medicine and Science (IIMS) to serve as the academic home for coordinating translational science initiatives and formalizing key strategic partnerships. Upon procurement of a CTSA in 2008, IIMS was designated as the lead institution and academic home, and significant progress on clinical and translational science became possible. IIMS expanded the number of clinical research units that extend to the Texas-Mexico border from one to seven, dramatically increasing access to clinical and translational science. We increased the number of Practice-Based Research Networks (PBRNs) from two to six, allowing a greater focus on the region's diverse populations. IIMS also supports the largest Department of Defense (DoD) inter-institutional investigation of battle-related mental health problems. We championed IRB process harmonization with our partners, resulting in one of the fastest review times within the National CTSA Consortium. IIMS also developed several new translational cores for 'omics and bio-repositories in UTHSCSA's state-of-the-art South Texas Research Facility, and we have developed a robust translational pilot grant program, shared among our partners, with a remarkable return on investment (~15:1). Over the past 8 years, IIMS's efforts to address translational science workforce needs have resulted in the graduation of more than 100 Master of Science in Clinical Investigation students, supported successful KL2 Scholars, and established new joint Translational Science PhD and Certificate programs; matriculants in these programs also reflect our region's diverse population. The IIMS informatics team has also been promoting electronic health record data warehouse development through our hospital partners and PBRN distributed primary care practices, fostering matches between IIMS investigators and practice-relevant research priorities; the IIMS is now poised to deploy a robust portfolio of programs across our growing, leveraged, and innovative network of partnerships. The close collaborative relationships that IIMS has forged with health care and other research institutions across the spectrum of academic, military, and veteran programs, clearly sets the stage for major advances in clinical and translational science. <http://iims.uthscsa.edu/>

UTHSCSA Institutional Cores: Starting in 2009, UTHSCSA expanded its institutional core support model to include supplemental annual funding for personnel salaries, space, maintenance, and replacement of instrumentation. Averaging \$850K annually, this includes salary support to compensate 11 faculty core directors in a consistent manner for their institutional effort. It also assures salary support for eight PhD-level technical directors and 13 technologists or lab managers. Centralized administration of institutional cores through the Director of Institutional Research Core Facilities improves operational efficiency and oversight, lends transparency, and helps the institution capitalize on opportunities to acquire external sources of funding to build infrastructure. Since 2010, the institution leveraged investments, grants, and contributions toward core infrastructure estimated at \$7M. Approximately 65% of that investment was contributed through external funding sources, including an NIH ARRA supplement to the CTSA grant for core consolidation (\$1.2M), NIH shared instrumentation grants (\$1.9M), and awards from the Cancer Prevention and Research Institute of Texas (\$1.1M). The research cores housed in the South Texas Research Facility (STRF) comprise five conjoined, functionally integrated areas that provide specialized laboratory space and instrumentation, along with adjacent areas for core personnel and data analysis. Major new instrumentation includes: two Q Exactive mass spectrometers with four HPLC systems for metabolomics, a 4-laser MoFlo Astrios cell sorter, a Nikon

superresolution fluorescent NSTORM microscope system, a Nikon swept-field microscope, and a Prairie technologies confocal/2-photon system. Capabilities of the new Core for Advanced Translational Technologies include the Luminex FlexMap3D for high-throughput multiplex bead arrays, DNA methylation analysis by pyrosequencing on the Qiagen PyroMark Q96 MD system, Fluidigm's Biomark HD microfluidic PCR for rapid cost-efficient genotyping and gene expression analysis, an Illumina miSeq for small-scale deep sequencing, and the Illumina iScan system for cost-effective genome-wide assays for gene expression, genotyping, and methylation. Additional services include comprehensive pre-analytical biospecimen collection, processing procedures, and storage in a state-of-the-art biorepository supported by emergency back-up power generators and an advanced freezer monitoring and alarm system from Isensix. Institutional Research Core Laboratories offer a broad spectrum of high-quality, cutting-edge research technologies and services to the biomedical scientific community, serving UTHSCSA teams, as well as external research researchers from either academia and industry. Each core laboratory is led by an internationally recognized scientist and feature expert technical staff and modern equipment. Currently, there are 9 research core facilities. Links to summaries of the facilities and the research applications are available [here](http://research.uthscsa.edu/RCL/Resourcepages.shtml) (<http://research.uthscsa.edu/RCL/Resourcepages.shtml>) <https://vpr.uthscsa.edu/coresv2/facility.php?ID=3>

Pure Profiles: An expertise profiling and research networking tool that can be searched by UTHSCSA department, concept, last name, or free text. Contains information on experts' publications, grants, journals, research/institutional/and coauthor networks, topic/concept area fingerprint, similar experts, and trends. The UTHSCSA link is <http://www.experts.scival.com/uthscsa/default.asp>. Additional information on how to use Pure profiles can be found through the Elsevier Training Desk, <http://trainingdesk.elsevier.com/products/SciVal-Experts>

The Center for Innovation in Drug Discovery (CIDDD): A joint venture between UTHSCSA and The University of Texas San Antonio (UTSA) is composed of two facilities: a high throughput screening (HTS) facility housed at UTHSCSA, and a medicinal and synthesis core facility house at UTSA. This allows chemistry expertise from UTSA to be coordinated with cell-based high content/high throughput drug screening capabilities at UTHSCSA. The ultimate intent of the CISS is to provide a diverse array of core facilities and expertise to facilitate the translation of basic scientific discoveries into tangible pre-clinical candidates that can be further developed into clinical therapies for human disease. <http://utcidd.org/>

Department of Laboratory Animal Resources:

The Department of Laboratory Animal Resources (DLAR) administers the animal care and use program at UTHSCSA, which is operated in compliance with the Animal Welfare Act (Public Law 89-544) and its amendments, the Public Health Service Policy on Humane Care and Use of Laboratory Animals and the *Guide for the Care and Use of Laboratory Animals* (8th ed). The University is accredited by the Association for the Assessment and Accreditation of Laboratory Animal Care, International (AAALAC).

DLAR is located within the Office of the Vice President for Research, and supports all aspects of teaching, testing and research which require the use of animals to include: investigator consultation on the humane care and use of laboratory animals; animal husbandry services; animal health care monitoring, diagnosis and treatment; animal facilities management; animal use procedural training; animal research proposal consultation; and euthanasia and necropsy services. <http://research.uthscsa.edu/lar/>

UTHSCSA Military Health Institute (MHI): The MHI supports University-wide efforts to enhance collaboration with the Department of Defense (DoD) and Department of Veterans Affairs (VA), with a specific focus on education, research, and clinical care. The MHI reports to the University President, and communicates closely

with the respective Deans and other University senior leadership. The MHI also facilitates DoD/VA collaboration across the broader University of Texas System through the UT Office of Federal Relations, Defense Advisors Group.

School of Medicine: UTHSCSA School of Medicine faculty are international leaders in behavioral health, neuroscience, imaging research, cancer, diabetes, healthy development and aging, and many other fields. In 2014, UTHSCSA's School of Medicine was named as the best medical school for Hispanics in the annual diversity report of HispanicBusiness.com (http://www.hispanicbusiness.com/branded/2014/diversity/2014_best_med_schools.asp) <http://som.uthscsa.edu/>

Department of Epidemiology and Biostatistics (DEB): The DEB contains epidemiology, biostatistics, bioinformatics, clinical informatics, public health, and research informatics to support the needs of all UTHSCSA. DEB's mission focuses on inter- and multi-disciplinary translational research within clinical and community settings, as well as education in all supported areas. DEB provides biostatistical, biomedical, clinical informatics, and epidemiological support through study/protocol/experimental design consultation, grant writing, power and sample size calculations, statistical analysis, public health program development and evaluation, survey design, health policy analysis, developing methodologies for analyzing big data, manuscript reviewing and editing, web-based information, and project management and collaboration, and information management support and development services. DEB has major clinical informatics, information and technology resources, including multiple large electronic information management, storage, and computing facilities, biomedical bioinformatics computational sequencing cores including the *ILLUMINACOMPUTE* processing cluster and a Next-Generation Sequencing (NGS) program, and a Genomics facility. <http://deb.uthscsa.edu/>.

Institute for Health Promotion Research (IHPR): The Institute for Health Promotion Research, founded in 2006 as part of the Department of Epidemiology and Biostatistics in the School of Medicine at UTHSCSA, researches the causes of and solutions to the unequal impact of cancer and chronic disease among South Texas residents. The IHPR and its more than 30-person staff and faculty aim to: develop, test and implement behavioral research, education, intervention and communication/outreach projects; train scientists and mentor students; and communicate with research, health, policy and community groups using IHPR-developed channels, including websites, public service announcements, role-model stories and videos, newsletters, educational publications, scientific articles, reports, and more. IHPR researchers have led more than 100 funded projects to reduce obesity, chronic disease, and cancer health disparities affecting Latinos, including cancer risk factors, clinical trial recruitment, tobacco prevention, and obesity prevention. IHPR researchers also are responsible for a trend-setting Latino health social media campaign, SaludToday. <http://ihpr.uthscsa.edu>

Research Imaging Institute: The Research Imaging Institute (RII) is a department-level entity with a mission to develop non-invasive imaging and measurement methods and apply these methods to basic and clinical research. Directed by Dr. Peter Fox, an internationally known neuroimaging scientist, the institute has 18 full-time faculty, 16 technical staff, and eight administrative staff. Organizationally, it comprises five service-oriented divisions; Human Electrophysiology Division/ Transcranial Magnetic Stimulation (TMS) Laboratory, Positron Emission Tomography (PET) Division, Radiochemistry Division, Magnetic Resonance Imaging Division, and the Biomedical Image Analysis Division (BIAD). <http://ric.uthscsa.edu/>

Human Imaging Research at the Medical Arts and Research Center (MARC). A major expansion of the imaging suite at the MARC was completed in January 2017. Although primarily used for clinical imaging, the new instrumentation is available to support human research and clinical trials. A state-of-the-art SPECT (Single-photon emission computed tomography) facility, features a Siemens Symbia Intevo 16 instrument that offers high sensitivity and flexibility, as well as total integration of SPECT and computed tomography. Based on this new SPECT facility, we are in negotiations to become one of 8 sites nationally for a large Phase 3 trial of a novel dopamine transporter probe for differentiating early Parkinson's disease from essential tremor. The second component of the MARC imaging expansion is the Siemens Biograph mCT-20 Excel PET-CT (positron emission tomography-computed tomography) instrument, a powerful molecular CT scanner particularly useful for early detection and staging of cancer, as well as planning and monitoring of therapy.

Cancer Therapy and Research Center (CTRC). The CTRC has been a National Cancer Institute-designated cancer center (NCI 5P30CA054174) for more than 25 years. It began as a joint venture between the then private CTRC and UTHSCSA. However, the two merged in 2007, resulting in the CTRC at UTHSCSA. Led by internationally known cancer biologist, Dr. Tim Huang, it is the only NCI-designated cancer center serving South Texas. CTRC provides state-of-the-art cancer care to the citizens of San Antonio and South Texas, and conducts innovative cancer research and training with a focus on serving our unique population. CTRC is the largest center at UTHSCSA, with three research programs and more than \$40M in cancer-related funding and one of the highest rates (47%) of Hispanic patient accrual in cancer-related clinical trials. For the past five years the CTRC and the IIMS have maintained close interactions, including collaboration on educational endeavors and a joint pilot project program. *CTRC's Institute for Drug Development (IDD)* is home to a very productive Phase I Oncology Program. IDD clinical trials focus on early-stage evaluations (with more than 4000 patients treated in early phase trials, and 30 first-in-human studies with locations in more than 47 counties throughout South Texas), as well as pharmacological and biological studies of investigational anti-cancer agents. IDD offers an Advanced Oncology Drug Development Fellowship Program for medical oncologists that provides unique translational research opportunities targeting oncology drug development in partnership with the pharmaceutical industry. This program has trained many of the current leaders in cancer drug development. The scope and capacity of clinical and translational research at IDD and CTRC create an innovative clinical trial infrastructure, enabling treatment of 500-600 new patients each year on research studies.. <http://www.ctrc.net/>

Greehey Children's Cancer Research Institute (GCCRI): Named for San Antonio businessman and philanthropist William Greehey, GCCRI is housed in a state-of-the-art \$50 million facility with 100,000 square feet of laboratory and office space for 18 to 20 research teams. Its mission is to advance scientific knowledge relevant to childhood cancer and accelerate its translation into novel therapies to eliminate cancer at all ages. Directed by world renowned oncopediatric researcher, Dr. Peter Houghton, the Institute has in its faculty a vibrant team of researchers dedicated to eradicating childhood cancer. In addition, GCCRI houses three institutional core facilities critical to the UTHSCSA and IIMS mission: Bioinformatics, Next Generation Sequencing (see **Core B**), as well as a state-funded pioneer pediatric xenograft core, established to accelerate discoveries in pediatric cancers affecting our South Texas patients. As the support of pediatric research and research education and training is a major focus of the IIMS, the resources provided by the GCCRI will be invaluable. The IIMS pilot program has included a GCCRI partnership for support of translational children's cancer projects.. <http://ccri.uthscsa.edu/>

Barshop Institute for Longevity and Aging Studies: The Barshop Institute is a world-class scientific community of researchers and physicians who seek discoveries to treat aging-associated diseases and ameliorate the biological processes that contribute to aging. Their mission is four-fold: To understand the basic biology of aging; to discover interventions that will prevent and/or cure the diseases of aging by fostering dynamic,

collaborative research; to educate and train our future scientists and clinicians; and to promote public awareness of age-related issues. Barshop scientists use advanced scientific methods to understand the basic biology of aging and aging-related disease processes. The Institute offers a wide range of core services and clinical facilities, as well as cutting-edge programs involving genomics and proteomics, transgenic animal models, and pathological assessments. On the clinical side, Barshop Institute clinician scientists and practicing geriatricians collaborate with older volunteers to bridge the knowledge gained at the laboratory bench with that learned in practice. Teaching and mentorship are integral to the Barshop Institute's mission. UTHSCSA is the only institution nationally to house three major NIA-funded centers: the San Antonio Nathan Shock Center focusing on the biology of aging, the Intervention Testing Center (jointly with University of Michigan and The Jackson Laboratory) for assessing lifespan interventions in the mouse, and the San Antonio Claude D. Pepper Older Americans Independence Center directed toward clinical and translational research in geriatrics. In addition, the NIA-funded T32 Training Grant has 10 predoctoral graduate student positions and 6 postdoctoral fellowships available, more than any other NIA-funded training program. . <http://www.barshop.uthscsa.edu/>

Department of Epidemiology and Biostatistics (DEB). UTHSCSA and its DEB have made substantial investments in developing research infrastructure in the areas of biostatistics, bioinformatics, clinical informatics, and research information systems intended to support the needs of the entire Health Science Center. DEB's mission focuses on inter- and multi-disciplinary translational research within clinical and community settings, as well as education in all its disciplines (i.e., epidemiology, biostatistics, bioinformatics, clinical informatics, research informatics). DEB has major information technology resources, including multiple large computer-based information management facilities. The biomedical bioinformatics computational sequencing cores provide state-of-the-art facilities, such as the ILLUMINA COMPUTE processing cluster, and a Next-Generation Sequencing (NGS) and Genomics facility featuring HiSeq and NextSeq systems. With two large infrastructure grants awarded in 2016, bioinformatics will spend over \$1M modernizing and expanding its capabilities through 2017. In total, DEB will provide over 50 servers and nearly a petabyte of total storage to support the research missions of IIMS and UTHSCSA. DEB also provides study/experimental design consultation, biostatistical analysis, and biomedical informatics support for IIMS, as well as other research centers.

Clinical Informatics Research Division (CIRD). CIRD is a research and academic division of DEB and IIMS dedicated to improving health care by bridging biomedical, statistical, and computational domains. CIRD collaborates with clinical, translational, and basic scientists who wish to make use of innovative informatics methods, including our analytical data warehouse, which is custom-designed by researchers for researchers. CIRD is UTHSCSA's link to the Greater Plains Collaborative (GPC) network funded by the Patient-Centered Outcomes Research Institute (PCORI). GPC is comprised of research data warehouses hosted by 10 medical centers throughout the country covering more than 5 million active patients. As a member site, we share technical expertise, software, and data. Among the many tools and platforms used by CIRD are the EpicCare Electronic Health Records system and the Velos eResearch Clinical Trials Management System

Clinical Care Partners

UTHSCSA's major clinical affiliates are UT Medicine, University Health System (UHS), and the South Texas Veterans Health Care System (STVHCS).

UT Medicine: UT Medicine constitutes UTHSCSA SOM's faculty practice. It is the largest medical practice in Central and South Texas, with more than 700 physicians. Many School of Medicine faculty members are known nationally and internationally for their work in such specialty areas as diabetes, cancer, infectious diseases, neurosurgery, orthopaedics, cardiology, pulmonary, nephrology, urology, and organ transplantation.

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Leading medical innovations (e.g., artificial shoulder, titanium rib, expandable coronary artery stent) were invented by UT Medicine physicians. Clinics are operated in multiple locations across the San Antonio metropolitan area, though UT Medicine's clinical home is the Medical Arts and Research Center (MARC). The MARC is home to more than 200 physicians, 30 specialty clinics, a day surgery center, an imaging center, and an on-site laboratory. IIMS operates a clinical research unit in dedicated space on the first floor of the MARC. <http://www.utmedicine.org/>

UT Kids: The academic pediatric practice at the School of Medicine at the UT Health Science Center at San Antonio. With almost 100 pediatric physicians and surgeons, UT Kids is the largest pediatric practice in Central and South Texas, and offers top-tier expertise in more than two dozen medical specialties and subspecialties. <http://www.utmedicine.org/utkids.cfm?pageID=63>

University Health System (UHS): Owned by the people of Bexar County, University Health System is a nationally recognized academic medical center, network of outpatient health centers, and the first public health system in Texas to be designated as a Magnet Hospital by the American Nurses Credentialing Center, and is a Level 1 trauma centers. UHS collaborates closely with UTHSCSA to improve the quality and outcomes of care for patients. Both institutions have long participated in shared efforts to reduce the well-documented health disparities experienced by Hispanics in the South Texas region. UHS is the largest safety-net hospital in South Texas, and serves a patient population that is primarily composed of low-income Hispanics. Being an urban municipal hospital serving a large minority population offers valuable opportunities to include underserved populations in clinical research programs, further the understanding of health disparities and health access barriers, and optimize effective patient communication. <http://www.universityhealthsystem.com/>

South Texas Veterans Health Care System (STVHCS): STVHCS serves a population of more than 300,000 Veterans, and tallies almost one million outpatient visits annually. It is comprised of two campuses, the Audie L. Murphy Division (ALMD) in San Antonio and the Kerrville VA Hospital in Kerrville, and a Satellite Clinic Division. The ALMD Hospital in San Antonio provides primary, secondary, and tertiary health care in medicine, surgery, psychiatry, and rehabilitation medicine. It also supports an Extended Care Therapy Center, a Spinal Cord Injury Center, a Bone Marrow Transplant Unit, and a Geriatric Research, Education, and Clinical Center. The ALMD Hospital campus also serves as the home of a Level-1 Polytrauma Rehabilitation Center.

San Antonio Military Health System (SAMHS): More than 10 years ago, the US Base Realignment and Closure Commission recommended the consolidation of Wilford Hall US Air Force Medical Center (WHMC) and Brooke Army Medical Center (BAMC) in San Antonio into one medical region with two integrated campuses, known collectively as SAMHS. BAMC transitioned to San Antonio Military Medical Center (SAMMC), a Level 1 trauma center and the Department of Defense's (DoD's) largest hospital with 425 inpatient beds and 32 operating rooms. It comprises the tertiary care center providing all inpatient services, as well as trauma and emergency medical care. Wilford Hall Medical Center is now designated the Wilford Hall Ambulatory Surgical Center (WHASC), the DoD's largest ambulatory surgery facility. The 59th Medical Wing at Wilford Hall comprises the Air Force's premier health care, medical education and research, and readiness unit. Together, the SAMHS treatment facilities manage a total combined budget of over \$1.2B and contribute more than \$138M annually in private sector care expenditures. Our DoD partners are full participants in all IIMS / CTSA cores and programs, for example through very active participation in our clinical and translational science degree programs (MSCI-TS and TS PhD), as well as our KL2 Mentored Career Development Program.

San Antonio Metropolitan Health District (Metro Health): Metro Health's mission is to provide leadership and services to prevent illness and injury, promote healthy behaviors, and protect against health hazards. Metro Health has extensive experience operating health improvement programs, and possesses substantial institutional knowledge regarding program development, implementation, accessing target populations, working with community stakeholders, and coordinating program logistics. <https://www.sanantonio.gov/health>

Partner Institutions

University of Texas System: Educating students, providing care for patients, conducting groundbreaking research, and serving the needs of Texans and the nation for more than 135 years, the UT System is one of the largest public university systems in the US, with 8 academic universities and 6 health institutions. Student enrollment exceeds 228,000 for the 2016 academic year. The UT System confers more than one-third of the state's undergraduate degrees and educates nearly two-thirds of the state's health professionals. It has an annual operating budget of \$17B, including \$2.6B in research funded by federal, state, local, and private sources. With over 100,000 employees, the System is one of the largest employers in the state. The UT System is dedicated to providing high quality educational and training opportunities to the large minority populations of Texas, most notably Hispanic Americans. According to *Hispanic Outlook in Higher Education* magazine rankings (based on data from the US Department of Education's National Center for Education Statistics), of the top 100 colleges awarding degrees to Hispanics in 2014:

UTSA's enrollment is 48% Hispanic (13,849)

UTSA is #8 in Bachelors degrees (2,176) and #8 in Masters degrees (417);

UTRGV is #3 in Bachelors degrees (3310), #4 in Masters degrees (786)

UTHealth School of Public Health (UTSPH). The UTSPH is a component of the UT Health Science Center-Houston. In addition to its main campus, the school has established 5 regional campuses around the state. IIMS partners with both the San Antonio Regional Campus (UTSPH-SA) and the Brownsville Regional Campus (UTSPH-B). *UTSPH-SA:* Established in 1979, the San Antonio Regional Campus is the oldest of the 5 regional UTSPH campuses. Its mission is to improve the public's health by providing high quality graduate education, research, and service to San Antonio and the wider South Texas Border region. The school is housed near UTHSCSA and is co-located with two other IIMS affiliates, the Research to Advance Community Health (ReACH) Center and the Institute for Health Promotion Research. This strategic location provides excellent opportunities for research in a population that experiences marked socioeconomic and health disparities. In addition to providing local classes, including our MD/MPH program, the school uses Interactive Television (ITV) as an important classroom interface to connect the campuses and to provide a diverse set of relevant courses to IIMS's Translational Science PhD program. UTSPH-SA has 11 faculty and about 130 students enrolled in the MPH, DrPH, and PhD programs, as well as dual degree programs (MD/MPH, MBA/MPH). Our partnership with UTSPH in teaching, research, and service, particularly in the areas of translational science, community engagement, and health literacy are directly in line with the mission of the IIMS (see **Core C**). *UTSPH-B:* UTSPH-Brownsville works closely with UTHSCSA's Laredo Campus Extension. Its strategic location provides excellent opportunities for research in a Hispanic population (Mexican Americans) with marked socioeconomic disparities. Its Hispanic Health Research Center focuses on reducing health disparities in Hispanics living in the South Texas Border Region, as well as nationally, using an integrated translational approach to public health in underserved areas through scientific discovery and community-based programs. In the educational realm, the school offers

certificate programs and Master of Public Health degrees, including focused programs in Epidemiology and Health Promotion and Behavioral Sciences. A dual degree MBA/MPH program is offered in conjunction with UT Brownsville. The campus also offers doctoral degrees in Epidemiology (PhD) and Public Health in Health Promotion (DrPH).

Texas Biomedical Research Institute (TX BIOMED): TBRI (formerly the Southwest Foundation for Biomedical Research) is home to the Southwest National Primate Research Center (SNPRC), 1 of 8 NIH-supported primate centers and home to the world's largest captive baboon population and 1 of only 2 national primate research centers that provide marmoset research resources. They maintain the only large population (>70) of aged marmosets (>10 years) in the country. The SNPRC provides nonhuman primate models and services to the regional and national scientific community. Collaborative SNPRC-UTHSCSA research programs have developed a number of animal models and resources, including prematurely delivered baboons with induced bronchopulmonary dysplasia, and baboons with beta cell compromise, along with a variety of innovative experimental techniques. For example, the bronchopulmonary dysplasia model played a critical role in the development of high-frequency ventilators, leading to major changes in the management of children in neonatal intensive care units. Collaborations between diabetes researchers at UTHSCSA and TBRI have led to the establishment of cutting-edge experimental techniques for metabolic studies in baboons. The SNPRC has a large cohort of pedigreed baboons extending over 7 generations, with more than 2500 having been fully genotyped. This unique resource has been used extensively in studies of cardiovascular disease, cholesterol metabolism, diabetes, obesity, and epilepsy, all of which exhibit familial patterns in the colony. TBRI also has long-standing research programs in diseases with global impact (AIDS, hepatitis, and parasitic diseases). The Institute's ~60 doctoral-level scientists have a combined research grants portfolio >\$50M. In addition, a number of NIH grants to UTHSCSA faculty include Institute scientists as co-investigators. TBRI has many unique resources for the support of IIMS T1 translational research. <http://www.txbiomed.org/>

Southwest Research Institute: One of the oldest and largest independent, non-profit, applied research and development organizations in the United States, and is headquartered in San Antonio. With ten technical divisions, the Institute's staff specializes in creating and transferring technology in engineering and the physical sciences, and provides expertise and services in engine design and development, medical information systems, chemistry and chemical engineering, and optics and sensor technology, among others.

South Central Area Health Education Center (AHEC): The South Central AHEC is an affiliated Center of the South Texas AHEC located in San Antonio. A 501(c)3 not-for-profit entity, the AHEC serves a 12-county area and is led by a board of community stakeholders. The AHEC provides assistance to researchers performing community-based participatory research in targeted populations by facilitating identification of participants for research studies, providing introductions to key stakeholders needed to pursue research projects, assisting in gathering preliminary data for research study proposals, and arranging for local presentations to disseminate research results. The AHEC also strives to increase awareness of the benefits of community-based participatory research to build community-specific strategic plans for health improvement. <http://www.southcentraltxahec.org/>

University of Texas San Antonio (UTSA): UTSA is the second-largest component in the UT System and one of the state's fastest-growing public universities. Its three San Antonio campuses enroll nearly 29,000 students, including 4,100 graduate students in 167 degree programs (73 bachelors, 70 masters and 24 doctoral programs), the majority of whom (70%) represent minority groups, including nearly a

50% Hispanic enrollment. UTSA was the recipient of a \$12.6 million NIH Research Centers in Minority Institutions (RCMI) award for support of a variety of initiatives, including the Institute for Health Disparities Research, which works closely with IIMS on its primary mission of eliminating health disparities in South Texas through integration of biomedical and socio-behavioral science approaches. In 2017, UTSA was one of only 5 US universities ranked in the prestigious Times Higher Education World University Rankings of the top 100 world universities under 50 years old, coming in at number 68. Funding for UTSA research has increased dramatically in recent years to >\$42 million in sponsored program awards, including NIH research and training grants totaling ~\$13 million. UTSA-UTHSCSA partnerships include, for example, PhD programs in Biomedical Engineering (BME) and Biostatistics and Bioinformatics, both of which provide interdisciplinary tracks for training MD/PhD students. The BME, RCMI, and IIMS programs jointly sponsor the monthly inter-campus Seminars in Translational Research (STRECH) program dedicated to state-of-the-art presentations geared to stimulate new collaborations. UTSA is also a partner in our recently implemented IIMS-sponsored Translational Science PhD program. The Center for Research and Training in the Sciences supports 19 UTSA interdisciplinary research and training programs, several of which are interactive with IIMS investigators and programs. The San Antonio Life Sciences Institute (SALSI), a State-funded joint program, supports research conducted collaboratively by investigators from the two institutions. Launched in 2003, the program has funded 74 collaborative projects for a total of about \$11 million. In addition to the Translational Science PhD and joint Biomedical engineering programs, UTSA students have the opportunity to receive computational biology/bioinformatics graduate education, paid internships, and continuing education. These opportunities have been available through a joint P20 grant from the National Institutes of Health (currently transitioning under institutional support to the R25 mechanism) to train informatics scientists and computational biologists in the field of cancer research. Kay Robbins, Professor of Computer Science, leads this interdisciplinary effort at UTSA, while the UTHSCSA team is led by Robin Leach, Professor of Cell Systems and Anatomy, and Yidong Chen, Professor of Epidemiology and Biostatistics. This program provides opportunities for both students and faculty to gain relevant experience by interacting directly with cancer center members at UTHSCSA's Cancer Therapy and Research Center. This collaboration will also provide researchers with needed computational analysis and modeling assistance from quantitative scientists across both campuses. Researchers, through the UTSA-IIMS partnership, will have a local resource for demographic data through the Institute for Demographic and Socioeconomic Research (IDSER), a UTSA interdisciplinary research institute. IDSER supports research on trends in social, demographic, and economic change in Texas and the nation to inform policy determination and implementation in education, health, criminal justice, and human services. It also supports the development of data resources on social, demographic, and economic trends to improve decision making and policy implementation in the public and private sectors. The Institute houses the Texas State Data Center and the Office of the State Demographer, which prepare population estimates and projections for the state, as well as Texas counties and cities, distribute demographic and economic information to private and public sector clients, and conduct research to improve the accuracy and utility of these products. IDSER is advancing research on health disparities (e.g., immunization and cancer disparities, obesity, and diabetes by race and ethnicity), as well as patterns and trends in health insurance coverage. The UTSA Center for Advanced Manufacturing and Lean Systems (CAMLs) was established in 2007 to provide a unique source of expertise in flexible and Lean Six Sigma methodologies and state-of-the-art technology applications with an emphasis on Advanced Manufacturing Systems and Lean Enterprise Systems. It provides an excellent collaborative infrastructure for UTSA faculty to work closely with both industry and academics. The goal of the Center is to establish a well-recognized research platform with unique expertise in flexible and lean manufacturing technologies and systems, as well as state-of-the-art sensor technologies, applied to manufacturing, service, and defense industries. The Center is highly

interdisciplinary, including faculty from multiple engineering departments, as well as other colleges and schools. Dr. Can Saygin, Director of the Center, as well as Professor of Mechanical Engineering and Associate Vice President for Sponsored Program Administration, is a key member of the CTSA/IIMS Evaluation and Implementation Team. Our previous and present CTSA applications use Lean Six Sigma methods to provide evaluation metrics and conduct process improvement projects across the full range of IIMS programs. UTHSCSA-UTSA collaborations have promoted the success of collaborative research centers. For example, the San Antonio Vaccine Center is a partnership among four San Antonio institutions – UTHSCSA, UTSA, TBRI, and Southwest Research Institute. Center programs run the gamut from basic to applied and translational research on prevention and treatment of acute and chronic infections, as well as bio-defense applications <http://utsa.edu/>

University of Texas-College of Pharmacy (UT-COP): UT-COP is a premier institution of pharmaceutical education and research; *US News & World Report* consistently places the UT-COP program among the top pharmacy programs in the country. The *Pharmacotherapy Education and Research Center (PERC)* is located at UTHSCSA, with dual reporting to the Deans of the UTHSCSA SOM and the UT-COP. Its mission is to educate and train future leaders in pharmacy, engage in innovative clinical and translational research, and provide exemplary patient care.

http://www.utexas.edu/pharmacy/intranet/directories/i_contacts_san_faculty.html

<http://som.uthscsa.edu/PERC/>

University of Texas School of Public Health (UTSPH): The UTSPH is a component of the UT Health Science Center-Houston. In addition to its main campus, the school has established five regional campuses across the state, including the UT School of Public Health- San Antonio (UTSPH-SA). UTSPH-SAs mission is to improve the public's health by providing high quality graduate education, research and service to San Antonio and the South Texas Border region. The school is housed near UTHSCSA, and is co-located with the *Research to Advance Community Health (ReACH) Center* and the *Institute for Health Promotion Research (IHPR)*. UTHSCSA partners with UTSPH in teaching, research, and service, particularly in the areas of translational science, community engagement, and health literacy. This strategic location provides excellent opportunities for research in a population that experiences marked socioeconomic and health disparities. <https://sph.uth.edu/>

<https://reach.uthscsa.edu/>

<https://ihpr.uthscsa.edu/>

Institute for Integration of Medicine & Science (IIMS):

The Institute for Integration of Medicine & Science (IIMS) is the academic home for the San Antonio and South Texas Clinical and Translational Science Award (CTSA). The IIMS integrates clinical health care with translational science to eliminate knowledge gaps, discover new diagnostic, therapeutic, and preventive approaches, and disseminate these advances regionally and nationally to improve health and reduce health care disparities. Building on highly effective administrative approaches developed over the past 10 years, IIMS features innovative governance managed by an interactive, balanced, multidisciplinary team of Principal Investigators with complementary talents and clearly defined responsibilities. Supported by a seasoned team of faculty and staff dedicated to high-quality programs, IIMS delivers expert services encompassing the full spectrum of clinical and translational investigation and training.

Our CTSA hub is comprised of teams of academic and community partners, all working together to develop a diverse workforce and improve the health of the population of South Texas and beyond. San Antonio is the largest city in our 38-county region, which includes many rural counties and extends to the Texas-Mexico border and covers an area larger than the state of Ohio. We are poised to capitalize on the

unique opportunities for clinical and translational research in our population, which is approximately 69% Hispanic. Our resources and services facilitate research that engages this population, which is enriched by its culture and family traditions, but burdened by health disparities. Hispanics are under-represented in clinical investigation, despite being the fastest-growing demographic in the nation. Because the current population demographics of South Texas reflect future US patterns, we are positioning ourselves now to solve problems that will be increasingly important for the health of the nation.

The Administrative Core manages essential, cross-cutting IIMS activities, including: a) governance and coordination with partner institutions; b) tracking, assessment, and evaluation geared to effective operations and efficient resource allocation; c) continual process improvement through an experienced Lean Six Sigma (LSS) team; d) a regulatory infrastructure that reduces administrative barriers while establishing a culture of safe and ethical research; and e) a robust informatics and data security program.

Value added to the IIMS and the CTSA Network: IIMS has an established infrastructure that coordinates with our partner institutions to promote translational research and education to improve health and reduce disparities. Our governance and leadership structures have a proven track record of effectiveness and successful partnership integration that meet the challenges faced by our institutions and communities. We will sustain this evolution as a translational research organization with a culture of continual process improvement and innovation, as we promote team science and collaborate with regional and national research networks.