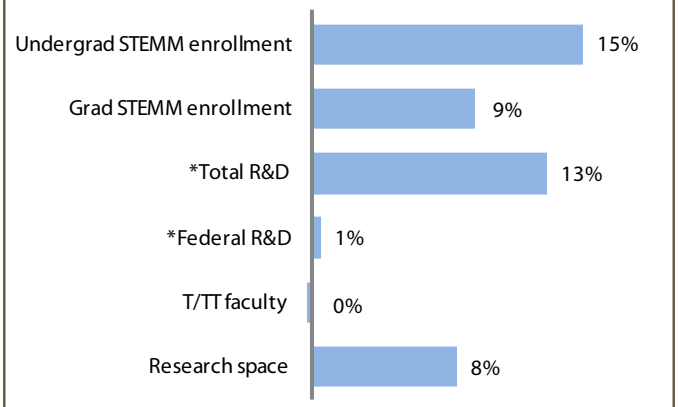
The University of Texas
Health Science Center at San Antonio

The UT System has responded to the challenge set forth by the Rising Above the Gathering Storm (RAGS) report and has committed more than $263 million to strengthen competitiveness at UT HSC-San Antonio. The initial impact of these investments is presented here, organized according to the four critical elements described by RAGS: education, research and technology development, competitive capacity, and incentives.

Indicators of Change, 2005-2008



STEMM = science, technology, engineering, math, and medical/health
* % Change, 2005-2007. Source: NSF.

UT HSC-San Antonio at a Glance

Student enrollment in STEMM, 2008	
Undergraduate	764
Post-baccalaureate	10
Graduate (% change since 2005)	2,286
STARs faculty recruited (2005-2008)	2
Physical space (square footage)	
Teaching	259,000
Research	533,400
Clinical	74,000
Increase in total sq. ft. through initiative	50%
New STEMM-related endowments (2005-2008)	$43.6 million
Research expenditures, 2008	$189 million
Federal research expenditures, 2008	$121 million
Intellectual property revenue, 2005-2008	$8.4 million
U.S. patents issued, 2005-2008	29
Licenses/options executed, 2005-2008	55
Start-up companies, 2005-2008	2

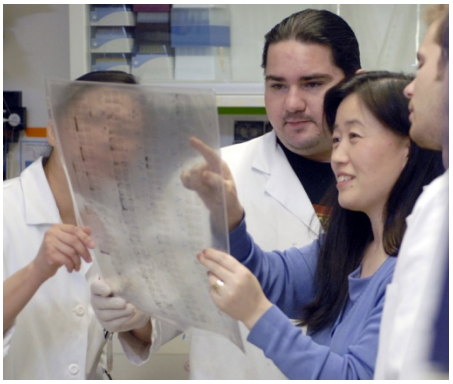
Education

Under the UT System Competitiveness Initiative, UT Health Science Center at San Antonio increased its competitiveness for student education by adding six STEMM degree programs. The expanded opportunities in communication disorders, dental laboratory sciences, dietetics, nutrition, and physical therapy have allowed UT HSC-San Antonio to set a goal of adjusting their student enrollment to meet market demands.

UTHSCSA is focused on increasing educational opportunities in science, technology, engineering, math, and medical/health (STEMM) fields to overcome the workforce shortfall predicted in the RAGS report. Undergraduate enrollment in STEMM has increased by 15 percent at UTHSCSA since 2005, adding 100 additional students, with most of this growth in nursing. This growth trend in STEMM enrollment is consistent with the 14 percent growth in undergraduate enrollment at all UT System health institutions.

Graduate enrollment in STEMM fields has increased 9 percent since 2005, adding an additional 188 students. The rate of increase at UTHSCSA is considerably larger than the 4 percent increase of STEMM graduate students enrolled at all UT System health institutions.

UTHSCSA has had a 15% increase in undergraduate STEMM enrollment and a 9% increase in graduate STEMM enrollment. This is nearly 300 additional students being trained in these critical fields.



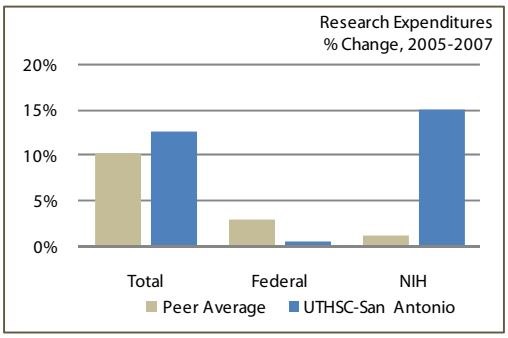
Research & Technology Development

UT Health Science Center at San Antonio has initiated several large-scale projects to support exceptional research and commercialization activities. These programs firmly establish the institution's contributions toward the UT System Competitiveness Initiative. UTHSCSA received one of fourteen 2008 Clinical and Translational Science Awards from the National Institutes of Health. The resulting Institute for Integration of Medicine and Science integrates clinical and translational research and career development across all University of Texas Health Science Center at San Antonio schools and among the following partners: CHRISTUS Santa Rosa Children's Hospital, San Antonio Metropolitan Health District, San Antonio Military Medical Center, South Texas Veterans Health Care System, Southwest Foundation for Biomedical Research, the University Health System, and the University of Texas at San Antonio. The five-year, $26 million grant will reduce barriers to research and stimulate the transformation of knowledge into improved health care.

The South Texas Technology Management office is responsible for providing technology development services to UTHSCSA, as well as UTB, UTPA, and UTSA.

UTHSCSA houses the University of Texas South Texas Technology Management (STTM), a regional technology transfer office affiliated with UTHSCSA and allied with the research departments of UT San Antonio, the UT Pan American, and UT Brownsville. STTM replaces the former UTHSCSA department, Office of Technology Ventures. STTM's mission is to provide comprehensive and integrated technology development services for its affiliates using the most effective protection and commercialization strategies to stimulate and capitalize on each University's intellectual property portfolio, thereby achieving maximum economic and humanitarian value for the Institutions, their staff, and their communities. STTM recently executed a license deal between Merck & Co., Inc., UT San Antonio, and UTHSCSA to develop a vaccine for Chlamydia. This license is the first revenue-producing license for any technology developed at UT San Antonio.

Investments in researcher and entrepreneur resources have resulted in major advances in research competitiveness indicators, often tracked by the money spent to conduct scientific investigations. Research expenditures at UT Health Science Center at San Antonio have increased at a significantly faster rate than peer institutions, totaling 13 percent between 2005 and 2007, while peers averaged a 10 percent increase. Research expenditures from federal sources increased less than one percent during the same time period while peers averaged a 3 percent increase. UT Health Science Center at San Antonio has demonstrated success in competing for extramural research funding from the National Institutes of Health, increasing NIH funding by 15 percent from 2005 to 2007 while peer institutions showed an increase of 1 percent.



Source: NSF, NIH.

Competitive Capacity

Competitive capacity, or the resources necessary to advance academic and research goals, is a fundamental building block for institutional activities. Resources include innovative buildings with advanced research laboratories and academic spaces, world-class faculty, recognition programs to support faculty efforts, and interest from external donors.

Faculty Recruitment

Attracting top-caliber senior researchers who are internationally recognized for advanced breakthroughs in their field leads to major innovations in discovery, development, and application of research. The number of tenured/tenure track faculty has remained relatively stable at UT Health Science Center at San Antonio since 2005. Two world-renowned faculty members were recruited through the STARs (Science and Technology Acquisition and Recruitment) Program.

STARs Faculty

Dr. Gregg Fields, one of "2,000 Outstanding Scientists of the 21st Century" was recruited to hold one of two Robert A. Welch Distinguished Chairs in the department of biochemistry and will partner with the departments of chemistry, physics, and the school of engineering at UT San Antonio to develop a research program in nano-medicine and drug design. STARs funding totaled $1.4 million plus an additional $240,000 from the STARs Plus program. The Welch Chair at UTHSCSA has a $2 million endowment and the nanomedicine efforts with UT San Antonio include approximately $10 million in renovations by UTSA.

Dr. Tyler Curiel, an expert in ovarian cancer, was recruited to hold the Hays Chair in Oncology, serve as scientific director of the Cancer Therapy and Research Center (CTRC), and director of the San Antonio Cancer Institute, which is only one of two cancer centers in Texas to earn such designation by the National Cancer Institute. Dr. Curiel was recruited from Tulane University Medical School in New Orleans and has developed innovative approaches to cancer treatment through the use of the body's immune system. Dr. Curiel brought with him an accomplished team of 20 faculty and post-doctoral fellows. STARs funding totaled $1.25 million, matched with endowed funds, a $15 million commitment over five years by the CTRC, and an additional $20 million over ten years by the UTHSCSA.

Infrastructure

UT Health Science Center at San Antonio increased research space by 8 percent since 2005, adding over 39,000 square feet. In addition, the Competitiveness Initiative funded the construction or renovation of five facilities: the Cyclotron Addition, the Laboratory Animal Resources Renovation, the Medical Arts and Research Center, the Pre-Clinical Laboratory Renovation and the South Texas Research Facility.

Competitiveness Initiative Provides $260 million for Capital Projects at UTHSCSA

The Ruth McLean Bowers Cyclotron Wing is a $3 million addition to the Research Imaging Center located in the Robert F. McDermott Clinical Science Building. The 3,200 square foot project was completed in spring 2008 and is being used to study basic mechanisms of cognitive learning, development, and aging in animal models for human diseases. In honor of a local philanthropist's donation of $1.6 million, the wing has been named the Ruth McLean Bowman Bowers Cyclotron Wing.

The Medical Arts Research Center will serve as the institution's multispecialty faculty practice group, combining eight research and clinical locations into a single medical practice within 286,000 square feet. The $100 million project is intended to be a "one-stop-shop" for both primary and specialty patient care. Innovative elements of the facility include "clinical neighborhoods" for easy navigation by patients and physicians and concierge services for patients. The Center is 90 percent complete and is expected to be fully complete in November 2009.

The South Texas Research Facility (STRF) will add 188,000 square feet of new research space to allow significant expansion of the institution's basic and translational research programs. Research to be carried out in the $150 million building will focus on translational research in scientific areas highly relevant to South Texas (e.g. diabetes, cardiovascular diseases, infectious diseases, cancer biology including molecular therapeutics, age-related neurodegenerative disease and developing technologies to protect the nation from Bio-Terrorism). Plans for a new program in metabolic biology and regenerative medicine are also in place that will use the San Antonio Life Sciences Institute as the prime engine. An important focus of the STRF will be the training of future clinician scientists from the South Texas region at the UTHSCSA. A National Center for Integrative Sciences will be developed in this facility, creating an environment for multi-disciplinary creativity and innovation that will accelerate the pace of discovery by moving the basic discoveries of UTHSCSA and its collaborative partners into applications and products that improve human health. Construction has begun and is expected to be complete by April 2011.

The Laboratory Animal Resources Renovation provides necessary space to better suit a large and expanding animal research program. The $4.8 million project includes a 1 to 1 match from grant funding and has been completed.

Philanthropy to Support STEMM Initiatives

UT Health Science Center at San Antonio raised almost $44 million in STEMM-specific endowments since FY 2005. Almost $1.3 million is distributed for STEMM research and scholarships on an annual basis. An additional $45.6 million in gifts helped support the construction costs of the Cyclotron Addition and the South Texas Research Facility.

Faculty Awards

The faculty at UT Health Science Center at San Antonio are often recognized for their significant contributions to their fields of study. For example, since 2005 six faculty members have been inducted to the American Academy of Nursing and seven received National Institutes of Health MERIT (Method to Extend Research in Time) Awards, a true symbol of scientific achievement in the research community. MERIT awards are rare, offered to less than 5 percent of NIH-funded investigators, limited to those who have demonstrated superior competence and outstanding productivity in previous research efforts. MERIT awards provide investigators with long-term, stable research funding to foster their continued creativity without the burden of preparing frequent research grant proposals.

NIH MERIT Award Recipients

Dr. Hanna Abboud is Jay H. Stein Endowed Chair in Medicine and Nephrology, and Associate Chair of the School of Medicine. Dr. Abboud is an expert in the kidney function of people with diabetes.	*Dr. Sunil Ahuja* is professor of medicine, microbiology, immunology, and biochemistry; and director of the Veteran's Affairs Center for HIV and AIDS Infection. Dr. Ahuja is an expert in host genetics, particularly related to HIV/AIDS.
Dr. Alan Frazer is professor and chair of pharmacology and studies the cellular mechanisms for antidepressant drugs.	*Dr. Brian Herman* is vice president for research and professor of cellular and structural biology. Dr. Herman is an expert in age-related decline of physiological function, particularly in the study of programmed cell death as an explanation for age-related disease.
Dr. Peter Hornsby is professor of physiology and expert in experimental cell transplantation for therapeutic purposes.	*Dr. Alan Richardson* is professor of cellular and structural biology; director of the Barshop Institute for Longevity and Aging Studies; and principal investigator and director of the Nathan Shock Center of Excellence in Basic Biology of Aging. Dr. Richardson's expertise is in oxidative stress in aging and age-related disease such as cancer, Alzheimer's disease, and Parkinson's disease.
Dr. David Weiss is professor and chair of physiology. Dr. Weiss' expertise is in the function of specific brain receptors that have been linked to brain disorders such as epilepsy.	

Incentives

Various Systemwide initiatives and institutional programs provide additional incentives to excel in science, technology, engineering, math, and health.

Faculty at the UT Health Science Center at San Antonio received two of the three Chancellor's Entrepreneurship and Innovation Awards in 2007. Dr. Julio Palmaz, Ashbel Smith Professor, received the award for research and innovation developed at a single institution. Dr. Palmaz invented the intravascular stent used to prevent blood vessels from collapsing in patients with cardiovascular disease, which is estimated to be used in 2 million patients each year. Dr. Alan Barbour, formerly UT HSC-San Antonio and now at the University of California-Irvine, received the award for research and innovation developed at multiple institutions. The award recognized his collaborative work with Dr. Steven Norris of the UT Health Science Center at Houston, for discoveries leading to a diagnostic test for Lyme disease. The test is now commercially available from 11 companies that have obtained U.S. or international licenses.

Julio Palmaz, M.D., accepts The University of Texas System Chancellor's Entrepreneurship and Innovation Award flanked by Chancellor Mark G. Yudof and Texas Senator Leticia Van de Putte.

UT HSC-San Antonio has developed a POCsparc (Proof of Concept: Short Proposals to Accelerate Commercialization) program to support early-stage projects that have a clearly defined path to the commercial marketplace. The program is administered by the UT South Texas Technology Management office. STTM awarded more than $313,000 during the first year of POCsparc. An additional $50,000 was awarded to fund two projects through Proof of Concept Roadrunner grants, which are available to UT San Antonio faculty through a supplement to the Emerging Technology Fund award that established the UT San Antonio Institute for Cyber Security.

Dr. Leonid Bunegin, Associate Professor of Anesthesiology, received a grant from the Texas Ignition Fund to further develop a technology that is used to transport organs between donor and transplant sites. The Fluidics Based Organ Preservation Device reduces costs for production and marketing and may improve transplant outcomes when compared to existing technology. Grant funds were used to complete critical experiments necessary for FDA approval of the device.