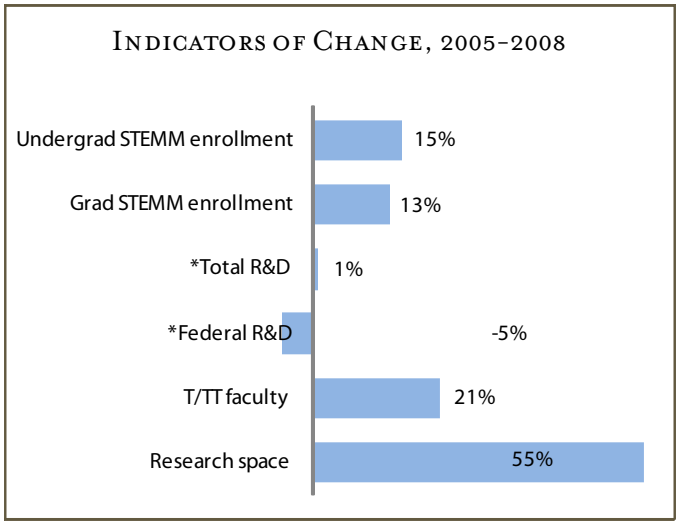
The University of Texas at Brownsville

The UT System has responded to the challenge set forth by the Rising Above the Gathering Storm (RAGS) report and has committed more than $34 million to strengthen competitiveness at UT Brownsville. The initial impact of these investments is presented here, organized according to the critical elements described by RAGS: education, research and technology development, and competitive capacity.



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

UT Brownsville at a Glance

Student enrollment in STEMM, 2008	
Undergraduate (STEMM % of total)	952 (6%)
Graduate (STEMM % of total)	36 (4%)
New faculty recruited (2005-2008)	56
Physical space (square footage)	
Teaching	130,000
Research	7,600
Increase in total sq. ft. through initiative	10%
New STEMM-related endowments (2005-2008)	$112,000
Research expenditures, 2008	$6 million
Federal research expenditures, 2008	$4 million
New invention disclosures, 2005-2008	1

Education

Under the UT System Competitiveness Initiative, UT Brownsville increased its academic physical space by more than 18,000 square feet, or 14 percent. This expansion has led to institutional priorities in education, particularly focused on enhancing student success, improving accessibility, expanding services, and promoting teaching and learning excellence. A major initiative that has emerged is the Math and Science Academy that allows high school students to complete two years of college concurrently with high school. The Academy fills a need to train more mathematicians, engineers, and scientists while giving high school students the opportunity to leave the program with up to 68 hours of college credit.

UT Brownsville also is committed to strengthening and developing quality programs that attract top students and faculty. These educational opportunities are those identified as having high economic demand: biology, environmental sciences, bilingual education, business administration (i.e., entrepreneurship, international business, and marketing) and health care professions.

New and enhanced undergraduate programs have led to a 15 percent increase in enrollment in STEMM majors at UT Brownsville. This growth trend is significantly higher than the 5 percent growth in undergraduate STEMM enrollment at all UT System academic institutions. In fall 2008, approximately 6 percent of all undergraduate students enrolled at UT Brownsville have chosen to major in a STEMM field. Undergraduate student enrollment in nursing programs increased 41 percent (226 students), which is significantly higher than the 9 percent growth trend at all UT System academic institutions. In contrast, undergraduate enrollment in health professions decreased 6 percent (19 students). This growth trend is less than the 6 percent increase in health professions enrollment at all UT System academic institutions.

Undergraduate enrollment in STEMM has increased 15% since 2005 because of new and enhanced undergraduate programs.

Graduate enrollment in STEMM has remained steady during the last four years averaging 36 students per year. STEMM graduate students comprise 4 percent of all graduate students at UT Brownsville. Graduate student enrollment in nursing remained relatively stable, while enrollment increased 12 percent at all UT System academic institutions. The new health professions graduate program enrolled its first students and is expected to grow to fill the needs of the region.

Research & Technology Development

UT Brownsville has shown a firm commitment to enhancing research activity and has created a new Office of Research. Dr. Luis Colom, professor of neurosciences and director of the Center for Biomedical Studies, serves as the inaugural Interim Vice President for Research. The new office is charged with supporting the success of research centers and implementing policies and procedures for technology transfer activities.

Research activities have expanded to include, astrophysics, biomedicine, environmental sciences, mathematics, computer sciences, nanotechnology and bilingual education among others. The university has actively participated in environmental projects including the largest wetland restoration project in the U.S. at the Bahia Grande. The university has also established partnerships with biotechnology companies to start projects in renewable energy and is actively supported by the South Texas Technology Management (STTM) for technology transfer activities. Faculty incentives for research, supported through the new Office of Research, are currently in the planning phase with the University Research Council and will be implemented in 2009.

The community has invested approximately $30 million through local Texas Southmost College bond projects in the International Technology Education and Commerce Center (ITECC) since 2002, including a recently completed $17 million facility improvement. A new division of Economic Development and Community Services was created at UT Brownsville in May 2009 to intensify university efforts in regional economic development. The new Vice President, Irv Downing, is responsible for ITECC's existing workforce development, business incubation and international trade assistance programs, as well as a new initiative that will focus on university research and commercialization collaboration with technology based companies.

The International Innovation Center at ITECC has supported more than 55 start-up companies in the region through its business incubator program. The program has also received $1.25 million from the U.S. Economic Development Administration to provide start-up companies with physical space and supportive services at a reduced cost.

The UT Brownsville School of Business and ITECC are primary sponsors of the Rio Grande Valley Business Plan Competition that offers a $7,000 cash prize to the winner. The competition was established to nurture the entrepreneurial spirit and promote the creation of innovative businesses in the Rio Grande Valley. This sponsorship is one example of UT Brownsville's commitment to the economic development of the region.

These investments in organizational and faculty excellence contribute to enhanced resources for faculty research projects, often tracked by the money spent to conduct the scientific investigations. Despite the difficulties at the national level to maintain federal funding, research expenditures at UT Brownsville have increased 1 percent between 2005 and 2007, while research expenditures from federal sources decreased 5 percent. Research expenditures from grants awarded by the National Institutes of Health (NIH) declined by 25 percent, although recent awards will likely reverse that decline in the near future. NIH funding makes up over one-half of all research expenditures from federal sources at UT Brownsville.

The National Science Foundation's Centers of Research Excellence in Science and Technology Award was presented to The Center for Gravitational Wave Astronomy. This $5.5 million award will be used to expand interdisciplinary research in gravitational wave astronomy.

Competitive Capacity

Competitive capacity, or the resources necessary to advance academic and research goals, is fundamental for institutional advancement. Resources include: world-class faculty, innovative buildings with advanced research laboratories and academic spaces, 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. UT Brownsville has increased the number of tenured/tenure track faculty by 21 percent, or 56 people, since 2005. These faculty bring innovative ideas and unique expertise to UT Brownsville, further enhancing the competitive stature of the institution. STARS Plus awards were given to two faculty for recruitment to UT Brownsville's department of physics.

STARs Plus Faculty

Dr. Volker Quetschke was recruited from the University of Florida, where he was a research scientist working with the laser Interferometer Gravitational Wave Observatory.

Dr. Ahmed Touhami was recruited from a post-doctoral fellow position at the University of Guelph. Dr. Touhami was part of the polymer surface and interface group in the department of physics.

Infrastructure

New construction and renovation of state-of-the-art buildings create educational and research possibilities that drive the competitiveness initiative. UT Brownsville's research space increased 55 percent since 2005, adding over 2,600 square feet. The Competitiveness Initiative will add almost 60,000 gross square feet of space for the Science and Technology Learning Center. The Science and Technology Learning Center consists of almost 60,000 gross square feet of research laboratory and teaching space for the biomedical program, an emergency response center, and the expansion of the allied health department. This impressive $33.8 million project also incorporates general purpose administrative and student support office space and is expected to be complete in March 2011.

Philanthropy to Support STEMM Initiatives

A compelling indicator of competitiveness is the institution's appeal to philanthropists who join the institution's commitment to excellence. UT Brownsville raised almost $112,000 in STEMM-specific endowments since FY 2005 for student scholarships. Almost $8,000 is distributed for STEMM scholarships on an annual basis from these new endowments. STEMM-related allocations equal 29 percent of the total philanthropic distribution per year.

Faculty Awards

The faculty at UT Brownsville are often recognized for their significant contributions to their areas of expertise and respective fields of study.

Dr. Frederick Jenet, assistant professor of physics and astronomy, received a National Science Foundation CAREER award, a prestigious grant in support of junior faculty who effectively integrate innovative education and research. Dr. Jenet's research expertise is in pulsar timing and wave detection, using unique precision timing of radio pulsars to detect gravitational waves. The $620,000 award provided Brownsville with access to the world's largest radio telescope, the 1,000-foot Arecibo Observatory in Puerto Rico. The Arecibo Remote Command Center, established at UT Brownsville, allows Dr. Jenet and high school and college students to control the telescope from the institution.