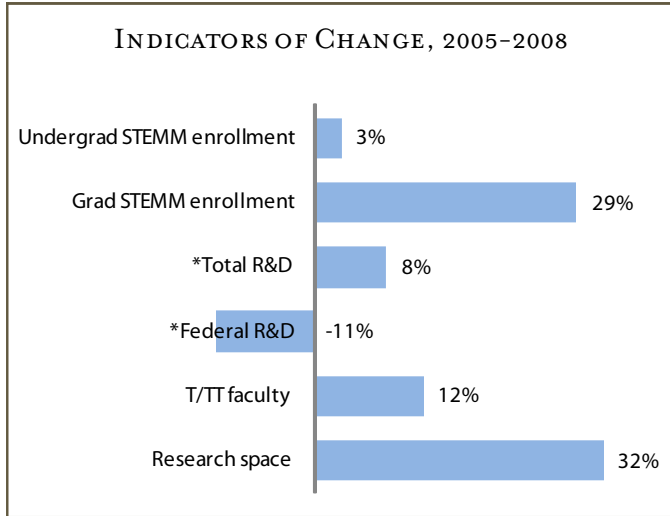


THE UNIVERSITY OF TEXAS AT DALLAS

The UT System has responded to the challenge set forth by the *Rising Above the Gathering Storm (RAGS)* report and has committed more than \$66 million to strengthen competitiveness at UT Dallas. 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.



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

UT DALLAS AT A GLANCE

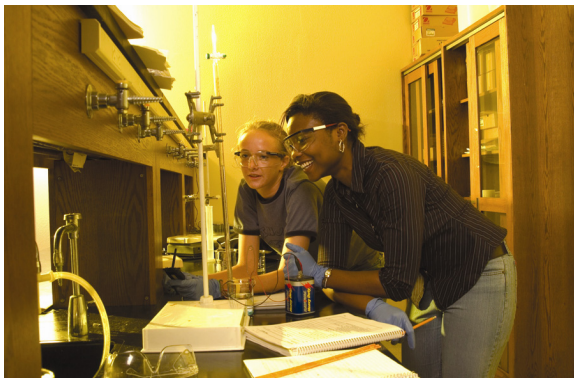
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|--|----------------|
| Student enrollment in STEM, 2008 | |
| Undergraduate (STEMM % of total) | 3,108 (31%) |
| Graduate (STEMM % of total) | 1,722 (35%) |
| New faculty recruited (2005-2008) | |
| STARs faculty recruited | 8 |
| ETF research superiority award recipients | 1 |
| Physical space (square footage) | |
| Teaching | 283,000 |
| Research | 224,500 |
| Increase in total sq. ft. through initiative | 7% |
| New STEM-related endowments (2005-2008) | \$6 million |
| Research expenditures, 2008 | \$59 million |
| Federal research expenditures, 2008 | \$21 million |
| Intellectual property revenue, 2005-2008 | \$286 thousand |
| U.S. patents issued, 2005-2008 | 23 |
| Licenses/options executed, 2005-2008 | 7 |
| Start-up companies, 2005-2008 | 2 |

Education

Under the UT System Competitiveness Initiative, UT Dallas will increase its academic physical space by 74,000 square feet. Increases in classroom and research space have opened the door to many new degree programs. UT Dallas established four new STEM degree programs in materials science and engineering and mechanical engineering. These expanded opportunities have allowed UT Dallas to set the goal of increasing its student enrollment to 22,000 over the next decade.

Approximately 1/3 of all undergraduate and graduate students enrolled at UT Dallas major in science, technology, engineering, math, and medical/health fields.

UT Dallas is focused on increasing educational opportunities in science, technology, engineering, math, and medical/health fields to overcome the workforce shortfall predicted in the RAGS report. Approximately one-third of all undergraduate and graduate students enrolled at UT Dallas major in STEM fields. Undergraduate enrollment in STEM has increased by almost 3 percent at UT Dallas since 2005 while overall undergraduate enrollment has remained essentially flat. This growth trend in STEM enrollment is less than the 5 percent growth in undergraduate STEM enrollment at all UT System academic institutions. Undergraduate student enrollment in health professions increased 17 percent, which is substantially higher than the 6 percent increase in health professions enrollment at all UT System academic institutions.



Graduate enrollment in STEM fields has increased 29 percent since 2005, adding almost 390 additional students. This growth is larger than the overall graduate enrollment of 15 percent at UT Dallas. The rate of increase at UT Dallas is considerably larger than the 9 percent increase of STEM graduate students enrolled at all UT System academic institutions while graduate enrollment for all majors increased by 4 percent. Graduate student enrollment in health professions programs decreased by

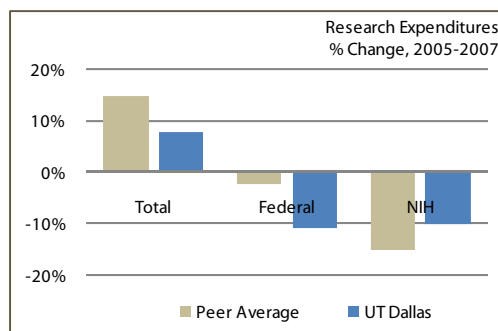
12 students (4%). This trend is significantly less than the 12 percent growth trend in health professions enrollment at all UT System academic institutions.

Research & Technology Development

UT Dallas has shown a firm commitment to creating an organizational structure that supports faculty research and commercialization activities. This commitment is essential for UT Dallas to meet its long-term goal of being a national research university. The university expanded research support and administration by creating several new positions. For example, a new position, Assistant Vice President of Research Development, was created to explore major interdisciplinary research proposals and to establish public-private research partnerships. Also, the Office of Technology Commercialization (OTC) was created to facilitate the launch of new enterprises through “virtual incubation,” meaning that assistance is given to potential start-up companies without providing physical space. OTC works closely with the Institute for Innovation and Entrepreneurship, a catalyst for collaboration and alliances among faculty, researchers, students and the broader community in order to nurture a culture of creativity, innovation and exploration across UT Dallas.

The administrative support for commercialization has shown results. One of many examples is the atomically precise manufacturing program. The industry/government/university partnership to develop a new manufacturing process at the atomic level will result in device advances in the fields of telecommunications, data encryption, pharmaceuticals, genetics, military, and many others. UT Dallas’ team, lead by the department of materials science and engineering professors Robert Wallace, K. J. Cho and Yves Chabal, will help advance this goal by concentrating on the precise control of material reactions on silicon during device assembly. The \$15 million project is funded in part by the Defense Advanced Research Projects Agency and the Texas Emerging Technology Fund and includes partners at Zyvex Labs, University of Illinois at Urbana-Champaign, the University of North Texas, the National Institute of Standards and Technology, General Dynamics, Molecular Imprints, Inc., and Circuit Scanning Probe Instruments.

These investments in organizational structure contribute to enhanced resources for faculty research projects, often tracked by the money spent to conduct the scientific investigations. Research expenditures at UT Dallas have increased 8 percent between 2005 and 2007, while peers averaged a 15 percent increase. Research expenditures from federal sources decreased 11 percent during the same time period while peers averaged a 2 percent decrease. However, research grants awarded by the National Institutes of Health (NIH) decreased less than its peers: UT Dallas decreased by 10 percent and peers reported a 15 percent decrease. NIH funding increased 67 percent at UT Dallas from 2007 to 2008, while peers decreased 6 percent.



Source: NSF, NIH

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.

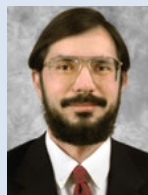
FACULTY RECRUITMENT

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 Dallas has increased the number of tenured/tenure track faculty by 12 percent, or 41 people, since 2005. Eight faculty members were recruited through the STARS (Science and Technology Acquisition and Recruitment) Program, including one faculty member—Dr. Yves Chabal—who was also recruited as part of a Texas Emerging Technology Research Superiority award for Nanoelectronics.

STARs FACULTY



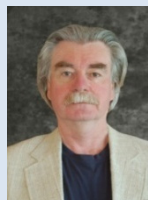
Dr. Yves Chabal, one of the world's foremost authorities on semiconductor surfaces and materials, was recruited from Rutgers University where he was the director of the Laboratory for Surface Modification. At UTD he is the first to hold the Texas Instruments Distinguished University Chair in Nanoelectronics and is professor of materials science and engineering and physics.



Dr. Russell Hulse is associate vice president for strategic initiatives in the office of the president and professor of physics and science and mathematics education. Dr. Hulse received the Nobel prize in 1993 for one of the most significant scientific breakthroughs in the 20th Century. The detection of the first binary pulsar that enabled testing of Albert Einstein's general theory of relativity.



Dr. Kenneth O, Texas Instruments Distinguished Chair in Engineering, was recruited from the University of Florida. Dr. O will serve as the first director of the Texas Analog Center of Excellence (TxACE), a \$16 million collaborative effort between the Semiconductor Research Corp., the Texas Emerging Technology Fund, Texas Instruments, the UT System, and UT Dallas.



Dr. John Oldow, head of the geosciences program and professor of structural geology and tectonics, was recruited from the University of Idaho. Dr. Oldow's research focuses on regional tectonics and processes related to active plate margins.



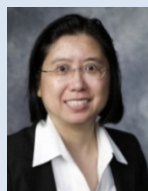
Dr. Denise Park is the T. Boone Pickens Distinguished Chair and UT Regents' Research Scholar and professor of behavioral and brain sciences. Dr. Park is an internationally renowned scholar in cognitive neuroscience, forging new territory in the understanding of brain function in memory and aging. Dr. Park was recruited from the University of Illinois at Urbana-Champaign to head the Productive Aging Laboratory in the Center for BrainHealth.



Dr. Myron Salamon, dean of the School of Natural Sciences and Mathematics and professor of physics, was recruited from the University of Illinois at Urbana-Champaign. Dr. Salamon plans to make the school a model for 21st Century academic research and education through an integrated, cross-disciplinary perspective.



Dr. Mark Spong, dean of the Erik Jonsson School of Engineering and Computer Science and Lars Magnus Ericsson Chair in Electrical Engineering, was recruited from the University of Illinois Urbana-Champaign. Dr. Spong's research focuses on robot control.



Dr. Li Zhang, Cecil H. and Ida Green Distinguished Chair in Systems Biology and chair of the department of molecular and cell biology, was recruited from Columbia University. Dr. Zhang's research focuses on environmental health sciences, such as reactions to environmental toxins at the cellular level.

INFRASTRUCTURE

New construction and renovation of existing facilities to create state-of-the-art buildings provide educational and research possibilities that drive the competitiveness initiative. UT Dallas increased research space by 32 percent since 2005, adding almost 55,000 square feet with the completion of the Natural Sciences and Engineering Research Laboratory. In addition, the Competitiveness Initiative funded three new facilities: the Center for BrainHealth, the Math, Science, and Engineering Teaching-Learning Center, and the Vivarium and Experimental Space.

COMPETITIVENESS INITIATIVE SUPPORTS \$50 MILLION FOR CAPITAL PROJECTS AT UT DALLAS



The Center for BrainHealth—winner of a 2009 Texas Society of Architects Design Award—is located in the Frances and Mildred Goad Building, an ultra-modern, 63,000-square-foot scientific institute that combines cutting-edge brain research with clinical interventions. The Center was originally funded by gifts totaling \$700,000; additional giving has increased private support to \$5 million. Innovative research and clinical services focus on brain disorders such as traumatic brain injury, stroke, autism, and Alzheimer's disease.

The Math, Science, and Engineering Teaching-Learning Center (MSET) is an integrated science and math teaching/learning building intended to provide a focused, high-quality education environment for math, science, and engineering undergraduate students. The 74,000 square foot facility is slated to serve as a major laboratory for research on effective teaching and learning techniques, both at the collegiate level and kindergarten through 12th grade. Construction is expected to total \$30 million and be completed summer of 2010.



The Vivarium and Experimental Space for neuroscience and neuron-engineering faculty will be located in the basement of the Natural Sciences and Engineering Research Laboratory (NSERL). The \$15 million project will complete 15,000 square feet of previous shell space. This project completes the NSERL building, a revolutionary, 192,000 square foot facility completed in 2007. The non-traditional building bears inspiring features such as overlapping anodized stainless steel pieces that reflect impressive color arrays and a façade with deep shadow boxes and cantilevered surfaces. The building's interior has open work stations equipped with large windows, encouraging cross-laboratory and cross-departmental collaboration where researchers can watch other scientists at work.

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 Dallas raised \$6 million in STEMM-specific endowments since FY 2005, including graduate fellowships, distinguished chairs to support faculty research, and student scholarships. Over \$650,000 is distributed for STEMM research and scholarships on an annual basis from these new endowments. STEMM-related allocations equal 80 percent of the total philanthropic distribution per year. In addition, UT Dallas raised \$5 million in gifts to support the Center for BrainHealth, one of the construction projects for the UT Competitiveness Initiative.

Since 2005, UT Dallas has raised \$6 million for endowments supporting science, technology, engineering, math, and medical/health fields. UT Dallas has also raised \$5 million in gifts to support construction of the Center for BrainHealth.

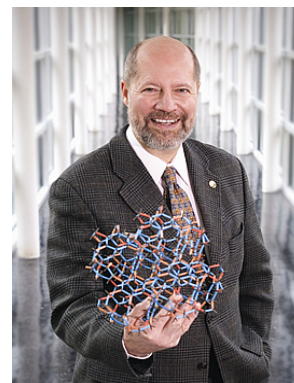
FACULTY AWARDS

The faculty at UT Dallas are often recognized for their significant contributions to their areas of expertise and respective fields of study. The institution's competitive stature is enhanced by the recognition that these awards bring and the experiences that are then shared with students. For example, Dr. Ray Baughman was elected to the National Academy of Engineering for his contributions to the field of nanotechnology. Other National Academy members include NAE members Dr. David Daniel, president of UTD, and Dr. Don Shaw, emeritus professor of electrical engineering, and NAS member Dr. Brian Berry, dean of the School of Economic, Political, and Policy Sciences. Dr. Yang Liu received a National Science Foundation CAREER award, a prestigious grant in support of junior faculty who effectively integrate innovative education and research. Dr. Marion Underwood, Ashbel Smith Professor of Behavioral and Brain Sciences, received an Independent Scientist Career Award from the National Institutes of Health. Dr. Charles Bambach received a prestigious Fulbright Fellowship to lecture and research poetic justice in German philosophy at the University of Tuebingen in Germany. Dr. Daniel Wickberg, professor in the School of Arts and Humanities and expert in American cultural and intellectual history, was awarded a Fellowship by the National Endowment for Humanities.

Incentives

Various Systemwide initiatives and institutional programs provide additional incentives to excel in science, technology, engineering, math, and medical/health. The UT System's Chancellor's Entrepreneurship and Innovation Awards recognized Dr. Ray Baughman, Robert A. Welch Distinguished Chair in Chemistry and the director of the Alan G. MacDiarmid NanoTech Institute, for his discoveries in carbon nanotube yarns and sheets and artificial muscles powered by fuel cells. Dr. Baughman was elected into the National Academy of Engineering in 2008 and his inventions have led to 58 U.S. patents.

The UT System Texas Ignition Fund (TIF) is a seed-grant program to further develop inventions that need additional work to attract angel or venture capital investors and advance the invention's path toward the marketplace. The TIF has funded projects to commercialize two inventions at UT Dallas. First, the StoneMag System is expected to enable, for the first time, a surgeon to effectively and rapidly retrieve all stone fragments from a kidney, significantly reducing operation time, treatment costs and the morbidity of stone recurrences. Second, researchers developed a technology that accounts for patient movement during Magnetic Resonance Imaging (MRI), improving the precision of images and resulting diagnoses.



Dr. Ray Baughman

