STRATEGIC PLAN

FOR

THE UNIVERSITY OF TEXAS AT DALLAS

Submitted to:

The Texas Higher Education Coordinating Board

Austin, Texas

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EXECUTIVE SUMMARY

The main challenge for The University of Texas at Dallas is to increase scale. UT Dallas is not yet large enough in key areas of research and scholarship to compete with the nation's top research universities.

The University, which started just over 40 years ago as a graduate research institute, has maintained rigorous admission standards for undergraduates and has established a research culture consistent with a major research university. UT Dallas possesses an excellent foundation for ascendency to top-tier status and enjoys strong support from the Dallas-Fort Worth Metroplex, which is the largest and most economically productive metropolitan area in the U.S. without a top-tier academic research university.

UT Dallas plans to continue doing what it has been doing: steadily increase the scale and impact of the University while continuing to improve quality and efficiency. Enrollment growth will provide the funds necessary to pay for additional faculty and associated support staff and operational costs.

Specific goals for the next 7 years, determined based on past growth and expected continued growth, are summarized on the next page and include the following:

- Increase the number of tenured and tenure-track faculty to 600-700
- Increase enrollment to 20,000 full-time equivalent students
- Increase annual research expenditures to $130M (total research), $70M (restricted research), and $50M (federal research)
- Increase the doctorates awarded from 179 per year (current) to 240 per year
- Increase new National Merit Scholars enrolled each fall from 63 to 75 scholars
- Raise needed private funds to increase endowment
- Meet the objectives of the Chancellor's Framework for Advancing Excellence

UT Dallas is already growing at or beyond the necessary rate of enrollment expansion assumed in this plan. The faculty is currently expanding at the desired rate. Over 487,000 gross square feet of new academic space, which is sufficient to accommodate 4,870 new students and 162 new faculty members, is in construction or design. Start-up funds are available, aided by the UT System STARS program. UT Dallas is currently raising funds at the pace planned for the next several years. Finally, UT Dallas is assertively implementing actions to support the Framework for Advancing Excellence.

In summary, this plan represents a straight-forward extrapolation of UT Dallas's current growth and actions. UT Dallas can readily achieve its goals provided there are no major changes in business fundamentals. Key metrics recommended for monitoring UT Dallas's progress are rate of enrollment growth, rate of increase in the size and quality of the faculty, and rate of growth of federally sponsored research.

AREA	PARAMETER	FALL 2012	IN 7 YEARS
Students	Total Enrollment	19,700	25,000
	FTE Enrollment	15,800	20,000
	Freshman SAT (1600 max.)	1270	1270
	Top 10% Students (Freshmen)	42%	55%
	National Merit Scholars	63	75
	4-year Graduation Rate	51%	55
	6-year Graduation Rate	64%	72%
Faculty	Tenured and Tenure-Track	493	600-700
	Faculty w/ Externally Funded Research	201	300
	Percent of Tenure, Tenure-Track Faculty w/ Externally Funded Research	41%	50%
Research	Total R&D	$ 91M	$130M
	Restricted R&D	$ 45M	$ 70M
	Federal R&D	$ 36M	$ 50M
Doctoral Programs	Number of Doctoral Programs	30	44
	Annual Graduates	179	240
Other	National Academy Members	4	10
	Annual Giving	$40M	$50M
	Endowment	$275M + PUF	$400M + PUF
	Academic and Research Space	1.8M sq ft	2.5 M sq ft

INTRODUCTION

In accordance with Chapter 5, Subchapter G of Coordinating Board rules, as mandated by House Bill 51, an emerging research university must develop a long-term strategic plan for achieving recognition as a national research university. This document presents the updated UT Dallas strategic plan and provides the information requested in the Coordinating Board guidelines (see Appendix A for those guidelines).

The University of Texas at Dallas can systematically build scale to become a top-tier research university. Success involves increasing student enrollment and number of faculty, increasing externally funded research, increasing PhD production, building the necessary infrastructure to support growth, meeting the needs of the Dallas-Fort Worth (DFW) community, and raising private funds. Faculty, students, and staff developed this strategic plan in a broadly collaborative process. The original plan was reviewed and approved by the Faculty Senate, Student Government, and Staff Council of UT Dallas. The updated plan provides the most recent data available.

SYNOPSIS OF UT DALLAS PROFILE

What is now UT Dallas started in 1961 as the Graduate Research Center of the Southwest and in 1967 was renamed the Southwest Center for Advanced Studies. These precursors to UT Dallas were primarily graduate education and research centers focusing on science, technology, and mathematics. The institution's founders gave the institution to the UT System in 1969, creating UT Dallas.

Forty years later, UT Dallas continues to reflect its graduate and research institute origins. Thirty-eight percent of the current enrollment is comprised of graduate students, an unusually high proportion for a public institution in Texas. Also unusual is the fact that 82% of all degrees awarded at UT Dallas are in science, engineering, mathematics, and business, a much greater proportion than at any other public university in Texas. The strong emphasis on science, engineering, and business is a distinct advantage as UT Dallas builds national competitiveness in research.

UT Dallas also has a high-quality undergraduate student body. Its average SAT score for incoming freshmen has typically been among the highest for public universities in Texas. The number of National Merit Scholars (63 in the fall 2012 freshman class) is competitive with many of the nation's top universities.

The University is located in one of the nation's largest and most economically vibrant metropolitan areas. Dallas-Fort Worth is the only metropolitan area among the nation's most productive without a top-tier academic research university. There is widespread recognition that this region needs and can support Tier One universities.

In 2004, the UT System retained the Washington Advisory Group and asked it to assess the status of UT Dallas and its potential. In its report, the Washington Advisory Group stated

that, "The main obstacle that UT Dallas faces in achieving its goals relates to scale – UT Dallas is simply too small in terms of the total number of faculty in each disciplinary or sub-disciplinary area." The challenge for UT Dallas is to grow and to increase its scale.

PRIOR STRATEGIC PLAN

In 2007, UT Dallas adapted a strategic plan entitled *Creating the Future*. This current document represents an update of the 2007 plan and is essentially identical in strategy, although some specific numbers and goals have been updated. The 2007 plan contained six strategic initiatives:

1. ***Tomorrow's Inventions*** – Strengthen research, the engine that drives innovation

2. ***Preparing Students for Tomorrow's Challenges*** – Prepare students for a lifetime of contribution and leadership

3. ***Managing Change in a Changing Society*** – Lead adaptation to our changing world

4. ***Securing the Safety of the Future*** – Create innovative means of ensuring safety

5. ***Improving Health and Quality of Life*** – Contribute to the health and vitality of the people of the region

6. ***Making a Great City Even Greater*** – Interact with the Dallas-Fort Worth community to strengthen the University and the surrounding region.

The 2007 strategic plan also contained eight imperatives:

1. ***Build Faculty Size*** – Increase the number of faculty members

2. ***Add 5,000 More Students*** – Increase enrollment by at least 5,000 students

3. ***Increase Research*** – Increase research expenditures to at least $100 million

4. ***Tell Our Story Better*** – Create a top-quality communications program

5. ***Increase Private Giving*** – Emphasize and increase private giving and endowment

6. ***Increase PhD Graduates*** – Add new doctoral programs and increase PhD production

7. ***Enhance Graduation Rates*** – Improve student success, retention and graduation

8. ***Improve Operating Efficiency*** – Be more efficient and cost effective.

The essence of UT Dallas' strategic plan is to grow the University by adding new degree programs in critical areas of need for North Texas, recruiting and graduating more students and more diverse students, hiring more nationally competitive faculty, increasing the number of faculty securing and participating in externally funded research, building the necessary facilities and infrastructure, and attracting the required private support.

VISION STATEMENT

The UT Dallas vision statement, approved by the UT System Board of Regents in 2007, is:

> *To be one of the nation's best public research universities and one of the great universities of the world.*

The mission statement for UT Dallas, articulated in "Creating the Future," is:

> *The University of Texas at Dallas serves the Metroplex and the State of Texas as a global leader in innovative, high-quality science, engineering, and business education and research.*
>
> *The University is committed to (1) producing engaged graduates, prepared for life, work, and leadership in a constantly changing world, (2) advancing excellent educational and research programs in the natural and social sciences, engineering and technology, management, and the liberal, creative, and practical arts, and (3) transforming ideas into actions that directly benefit the personal, economic, social, and cultural lives of the citizens of Texas.*

UT Dallas aspires to be a nationally competitive public research university with an eventual enrollment at full maturity of 25,000 to 30,000 students. This target size was selected because it is big enough to enable UT Dallas to be competitive with leading public research universities but small enough to preserve the quality and focus of UT Dallas.

Table 1 summarizes the benchmark institutions we use to compare ourselves to. Some might say that UT Dallas is reaching too far by including several lofty institutions among aspirational peers, but UT Dallas has always had high goals. Some characteristics of UT Dallas, such as undergraduate student quality, currently exceed comparable metrics for several institutions in the Aspirational Peer Group. This peer group is made up of five members of the AAU and 5 highly ranked Universities that currently are not members of the AAU.

Table 1. Summary of Selected Characteristics of our Benchmark Universities

University	Reputation Ranking among Public Universities [1]	Medical School?	Member, Assoc. of American Univ. (AAU)?	Enrollment[2]	Number of Tenure-Line Faculty[3]	Total Research in 2011 ($M)	Federally Funded Research in 2011 ($M)	No. of National Academy Members[4]	No. of Doctorates Awarded per Year[5]	Annual Giving ($M)
Iowa State	68	No	Yes	29,611	1288	$224	$96	9	301	$57
Kansas	70	Yes	Yes	27,939	1476	$132	$83	6	281	$100
Oregon	68	No	Yes	24,396	680	$76	$61	8	161	$121
Stony Brook SUNY	67	No	Yes	23,920	939	$258	$107	12	283	$66
Washington State	63	No	Yes	27,329	1100	$286	$96	9	177	$59
Arizona State	66	No	No	72,254	1741	$282	$135	20	490	$104
Delaware	67	No	No	21,489	939	$124	$87	8	176	$32
Georgia	73	No	No	34,816	1646	$350	$107	7	417	$69
NC State	66	No	No	34,767	1487	$381	$135	18	422	$79
Virginia Tech	71	No	No	30,936	1417	$397	$148	13	403	$81
AVERAGE	**68**	**---**	**---**	**32,745**	**1271**	**$ 251**	**$ 105**	**11**	**311**	**$77**
UT Dallas in fall 2012		**No**	**No**	**(15800 FTE)**	**493**	**$95**	**$36**	**4**	**179**	**$40**

* Main Pittsburgh campus only

1. IPEDS enrollment, fall 2011
2. IPEDS Faculty Salaries 2007-08 for full-time assistant, associate and full professors
3. The Center for Measuring University Performance, Arizona State University

The average enrollment for the ten benchmark universities is 32,745 students, and average total research funding is $251M per year. Since total research funding is imprecisely defined, a valuable and consistent measure of external research funding support is federally funded research, which averages $105M for this group of ten universities. Note that the "entry level" of research funding for this group is federally funded research above $50M.

Table 2 presents a comparison between UT Dallas in fall 2012 and the average of the ten benchmark institutions. An important difference between UT Dallas and the group of comparative universities is not only the total number of students but also the number of full-time-equivalent (FTE) students. UT Dallas has a significant number of part-time master's students, especially in business. Part-time students represent an important asset for UT Dallas and its community; as UT Dallas grows, the number of part-time students is expected to increase, but growth in full-time students should be even faster. The number of FTE students at UT Dallas highlights the challenge of scale.

Table 2. Comparison of UT Dallas with the Average of the Five Benchmark Universities without Medical Schools from Table 1.

Parameter	UT Dallas	Average of 10 Benchmark Universities
Enrollment	(15,800 FTE)	(≈32,745 FTE)
Tenured and Tenure-Track Faculty	493	1271
Total Research	$91M	$251M
Total Research per Faculty Member	$185K	$197K
Federal Research	$36M	$105M
Federal Research per Faculty Member	$73K	$83K
Doctorates per Year	179	311
Doctorates per Year per Faculty Member	0.36	0.24
National Academy Members	4	11
Annual Giving	$40M	$77M

*Date from Center for Measuring University Performance

In terms of research productivity, UT Dallas is within reach of the group of benchmark universities on a per-faculty-member basis. Table 2 illustrates that while total annual production is significantly lower than the comparative group, the productivity is similar when measured on a per-faculty-member basis for total research and federal funding, and UT Dallas has better output in terms of Doctorates per year per faculty member.

Description of Targeted Status of UT Dallas

As indicated by the University's vision statement, UT Dallas aspires to be a major, nationally competitive public research university. The University plans to maintain its strong position in science, engineering, mathematics, and business, and to add appropriate degree

programs that have natural affinity with existing programs and represent high-need areas for the North Texas region. The University currently has a mix of 38% graduate students and 62% undergraduate students, and plans to maintain this general balance.

At full development, UT Dallas expects to have close to 30,000 students. The institution does not aspire to be larger than this. With 30,000 students, UT Dallas would be large enough to be able to compete with the best public research universities in America, but could maintain its focus and emphasis on quality, which are core values to be sustained.

The metrics listed in Table 3 quantify the targeted status for UT Dallas in 7 and 17 years. More information about how these numbers were developed is provided later.

Table 3. Summary of Key Goals for Growth and Research Expansion.

Parameter	**Current**	**Target: 7 years**	**Target: 17 years**
Student Enrollment	19,700 (15,800 FTE)	25,000 (20,000 FTE)	28,000 (23,000 FFE)
Tenure/TT Faculty	493	600-700	800
Staff	2,800	3,500	5,000
Total Research	$91M	$130M	$250M
Restricted Research	$45M	$70M	$140M
Federal Research	$36M	$50M	$100M
Endowment	$275M + PUF	$400M + PUF	$1B + PUF
Doctorates Awarded	179	240	300
National Academy Members	4	10	25
National Merit Scholars	63	75	100

Because growth is an essential element of this strategic plan, it is appropriate to examine whether growth plans are realistic. Figure 1 shows the enrollment trends for the past ten years along with projections for the next ten years.

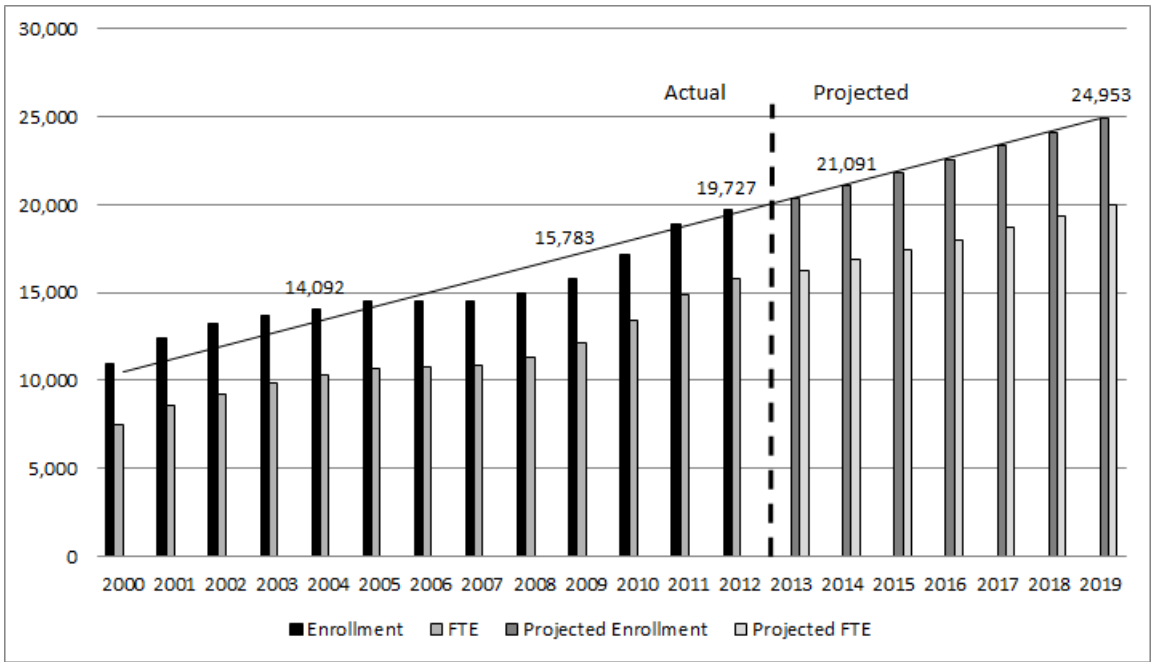

Figure 1. Enrollment Trends from 2000 to 2012, and Projections for 2013 to 2019.

The FTE student enrollment at UT Dallas has been increasing faster than total enrollment because UT Dallas has been adding proportionally more full-time students than part-time students. UT Dallas is assuming that enrollment will increase by an average of 3% to 4% per year over the next ten years. At that rate of growth, enrollment seven years hence will be approximately 20,000 FTE students and 25,000 total students.

Concurrent with growth in enrollment over the past years has been improvement in the quality of incoming undergraduate students. In the past several years, the mean SAT scores ranged from 1225 to 1275 (based on 1600 maximum) and often were the highest among public universities in Texas. Looking to 2019, the entering freshmen class is expected to have an average SAT (V+M) of 1250. Ten years hence, over 50% of entering freshmen are expected to graduate in the top 10% of their high school senior class. The University will also continue to recruit heavily the qualified transfer students from area community colleges.

The 2007 plan also focused on graduation rates for entering freshmen. The current four-year graduation rate for freshmen is 51% and the six-year rate is 64%; the ten-year plan is to raise these rates to ??% and 72%, respectively[1].

In keeping with this focus on excellence and expansion, UT Dallas has been successful in recruiting National Merit Scholars. Figure 2 shows trends from recent years and projections for the next ten years.

[1] Graduation rates quoted are for first-time-in-college (FTIC) freshmen who enter UT Dallas and graduate from UT Dallas. The rates would be higher for those who enter UT Dallas and transfer to and graduate from another Texas public university.

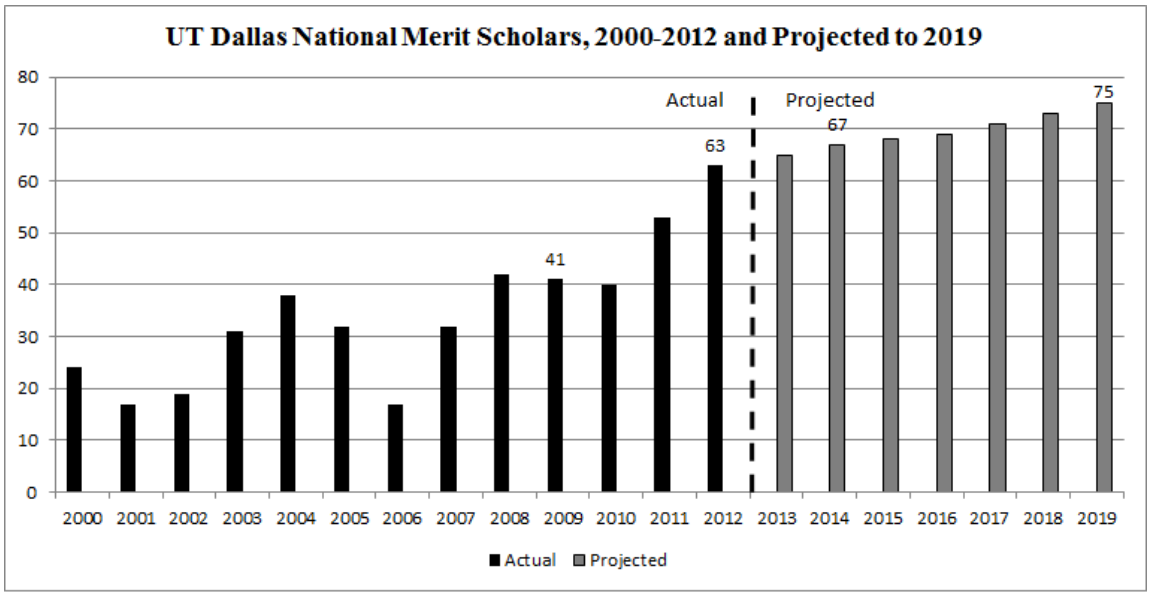

Figure 2. Summary of Past Trends and Future Projections for National Merit Scholars Enrolling at UT Dallas Each Fall.

Does the Plan Reflect a Change in Direction?

This plan reflects a continuation of long-standing efforts to build an outstanding research university. The main challenge for UT Dallas is not remaking the culture or changing direction; the main challenge is continuing to scale up the University in a focused, intelligent manner.

PLAN TO INCREASE RESEARCH FUNDING AND PRODUCTIVITY

Faculty Growth Plan

To compete successfully with leading, relatively small, nationally competitive public research universities, UT Dallas needs a faculty of at least 600 to 800 members. UT Dallas plans to increase the number of tenured and tenure-track faculty members from the current 493 faculty members to 600-700 faculty members within seven years.

Figure 3 provides information on the actual growth in the size of the tenured and tenure-track faculty over the past several years, and shows planned growth over the next seven years. To achieve these goals, UT Dallas plans to:

1. Hire 150 net new faculty members to increase the size of the faculty to 600-700 faculty members (i.e., “new faculty positions”); and

2. Replace faculty members who leave the University due to retirement, resignation, or termination ("replacement faculty positions").

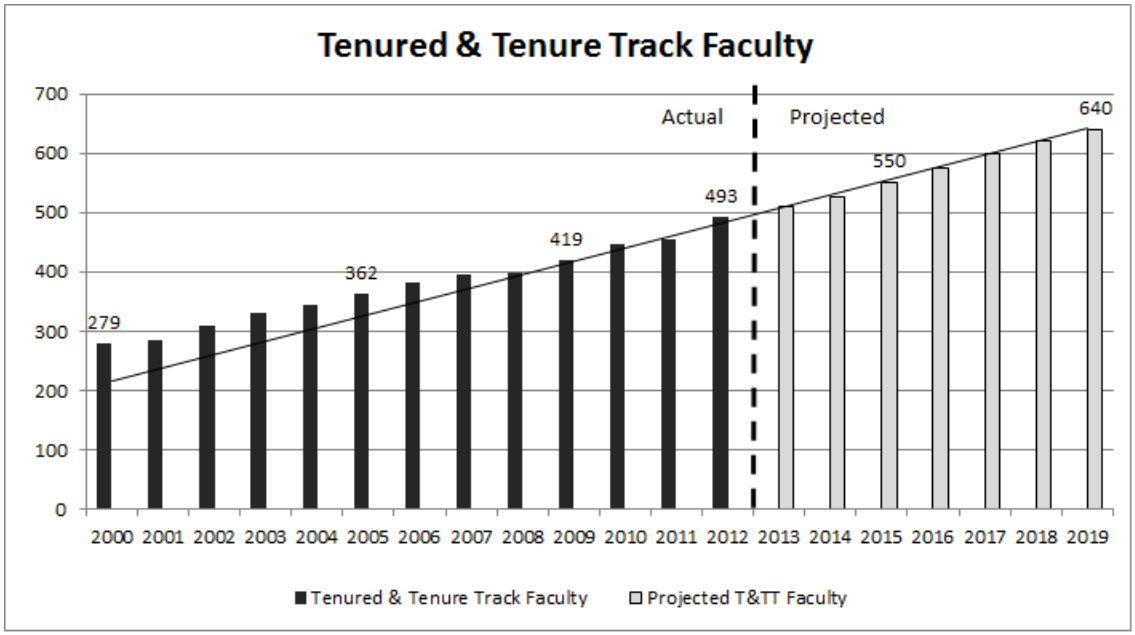

Figure 3. Past and Projected Trends in Number of Tenured and Tenure-Track Faculty.

In the past several years, UT Dallas has experienced a faculty turnover rate of about 3.5% each year due to attrition. In the next ten years, it is estimated that 150 faculty members will need to be replaced due to attrition. Thus, UT Dallas will be hiring approximately 300 new faculty members over the next ten years – 150 "new faculty positions" and 150 "replacement faculty positions" – for an average total hiring rate of 30 per year.

UT Dallas has hired 20 to 40 new faculty members per year during the past decade. The planned average hiring rate of 30 new faculty members per year is consistent with recent trends.

Growth is expected across the board, although proportionally higher growth is planned in the areas in which research, new degree programs, and enrollment are expanding the most. Table 4 summarizes the planned distribution of new tenured and tenure-track faculty members within the various schools of UT Dallas. This table also shows in the right-hand column the anticipated number of faculty members within each school who are expected to be active in securing and performing externally funded research as principal or co-principal investigators.

Table 4. Plan for Faculty Growth.

School	Current Faculty[1]	Faculty in 10 yrs	Change in No. of Faculty	Faculty Engaged in Externally Funded Research in 10 yrs
Arts and Humanities	57	70	+13	12
Behavioral and Brain Sciences	42	53	+11	40
Economic, Political, and Policy Sciences	61	80	+19	40
Engineering and Computer Science	97	170	+73	125
Interdisciplinary Studies[2]	3	3	-	1
Management	79	107	+28	10
Natural Sciences and Mathematics	80	127	+47	72
TOTAL	**419**	**610**	**191**	**300**

[1]Tenured and Tenure-Track Faculty, census day, fall 2009.
[2]Most of the courses in interdisciplinary studies degree programs are offered by other schools.

UT Dallas must not only increase its faculty size, but it must also increase the number of faculty members who are actively engaged in externally funded research. UT Dallas currently has 201 tenured and tenure-track faculty members who are principal or co-principal investigators on externally funded research grants and contracts. In seven years, the number of faculty members involved in externally funded research needs to increase to 300 faculty members (Table 4).

The productivity on a per-faculty-member basis for the 201 faculty members who are currently involved in externally funded research at UT Dallas is:

- $452,000 per faculty member in total research expenditures ($91M total)
- $224,000 per faculty member in restricted research expenditures ($45M total)
- $179,000 per faculty member in federal research expenditures ($36M total)

UT Dallas exhibits competitive research productivity for individuals involved in externally funded research. These data emphasize that the challenge is to support the current productivity of those who are involved in research and to increase the number of faculty members who are involved in externally funded research.

To increase the number of faculty members who are actively engaged in externally funded research from 201 (current) to 300 in seven years will require an increase of approximately 100 faculty members engaged in externally funded research. The University believes that hiring new faculty members committed to a line of scholarship that involves external funding is a more practical way to increase funded research than trying to retrain or reorient

faculty members whose established career paths do not involve such funding. To achieve the goal of adding 100 new faculty members who will be involved in externally funded research, at least 33% of the 300 faculty hires over the next ten years must be active in externally funded research, which is consistent with our recent hiring trends.

The University recognizes that not all faculty members can or should be engaged in externally funded research. Some fields do not require it, although they are still important to a robust center of learning. The intellectual merit of research is measured by the quality and significance of the work done, which can include the education and training of students, publications, discoveries, intellectual property, new forms of artistic expression, and new products and services. External research support is most significant in fields of science, engineering, and medicine where it is impossible to conduct competitive research without resources to pay for equipment, materials, and personnel such as graduate students and post-doctoral scholars. UT Dallas will use research dollars as a measure of individual and institutional vitality in areas for which external resources are necessary to compete effectively with national research universities and not as a sole measure of excellence.

The Opportunities that Growth Presents for Each School within the University

Each of UT Dallas' schools will contribute to the realization of the University's goals. The rationale and opportunity for growth in each school are summarized as follows:

- Arts and Humanities: The Arts and Technology Program has experienced strong growth in enrollment and external research funding. In addition, the new degree program, emerging media and communications, offers major potential for growth and research.

- Behavioral and Brain Sciences: Opportunities exist to expand research in neuroscience, hearing science, language and speech, psychology, and human development. Current projects range from earlier diagnosis of autism, learning about the aging brain, how neuroplasticity changes brain trauma outcomes, and training families to maximize healthy child development.

- Economic, Political, and Policy Sciences: Significant research opportunities include experimental/behavioral and public/urban economics, geospatial science, criminology, and public policy. Education of scholars and leaders for governmental and nonprofit organizations is a key element of the research strategy.

- Jonsson School of Engineering and Computer Science: This young school has yet to implement several of the programs typically found at leading engineering schools. Recently implemented programs include materials science and engineering, biomedical engineering, mechanical engineering, and systems engineering. New opportunities of importance to engineering and North Texas include chemical and biomolecular engineering, and environmental engineering, among others.

- Interdisciplinary Studies: This popular degree program will continue to play a significant role in undergraduate education, interdisciplinary master's programs, and teacher preparation.

- Management: The School of Management is the University's largest school and one of the most research-intensive business schools in the nation. Strengths in quantitative aspects of business systems, such as supply chain logistics, create opportunity for externally funded research and collaboration with other schools. Growth will emphasize research, technology, and the needs of DFW-area businesses.

- Natural Sciences and Mathematics: Large growth potential exists at the interface among physics, chemistry, mathematics and biology in areas such as nanomedicine, biostatistics, and human genome analysis. The School is also actively pursuing collaborative opportunities in biomedical imaging with UT Southwestern Medical Center - Dallas.

Goals for External Funding

The University monitors three types of research expenditures: total research expenditures (all resources committed to research), restricted research expenditures (direct expenditures from external funds dedicated to research), and federal research expenditures (non-agricultural, federally supported research from agencies such as the National Science Foundation and National Institutes of Health). In establishing goals, UT Dallas assumes that past trends of growth will continue.

Federal research funding is a critical measure of success for a national research university. Federal research expenditures for UT Dallas were $21M in 2007-08 and $36M in 2011-12. UT Dallas plans to double federal research expenditures over the next ten years. The longer-term goal is to increase federal research expenditures to more than $100M, which would be fully competitive with top-tier national research universities.

Restricted research expenditures stood at $45M in 2011-12 Restricted research includes federal research funding as well as corporate funding and research supported by individuals and foundations, e.g., in health fields. UT Dallas has historically attracted support from numerous technology companies in the DFW area, as well as significant private and foundation support for research organizations such as the Center for BrainHealth. The ten-year goal for restricted research funding is $70M, and the longer-term goal is more than $140M.

Total research expenditures, not including research equipment, were $91M in 2011-12. The goal in 7 years is total research expenditures of at least $130M and eventually more than $250M.

Figure 4 shows trends over the past few years in federal and restricted research expenditures as well as plans for growth for the next ten years.

To summarize, the UT Dallas plan for meeting its research goals includes:

- <u>Increase the size of the UT Dallas faculty</u> from 493 (fall 2012) to 600-700 in 7 years, and eventually to 800 in 20 years.

- <u>Increase the number of faculty who are actively engaged in externally funded research</u> from the current 201 to 300 in seven years.

- <u>Hire established “star” faculty members</u> in new areas and in areas of growth to rapidly establish programs and help in recruiting high-quality junior faculty members.

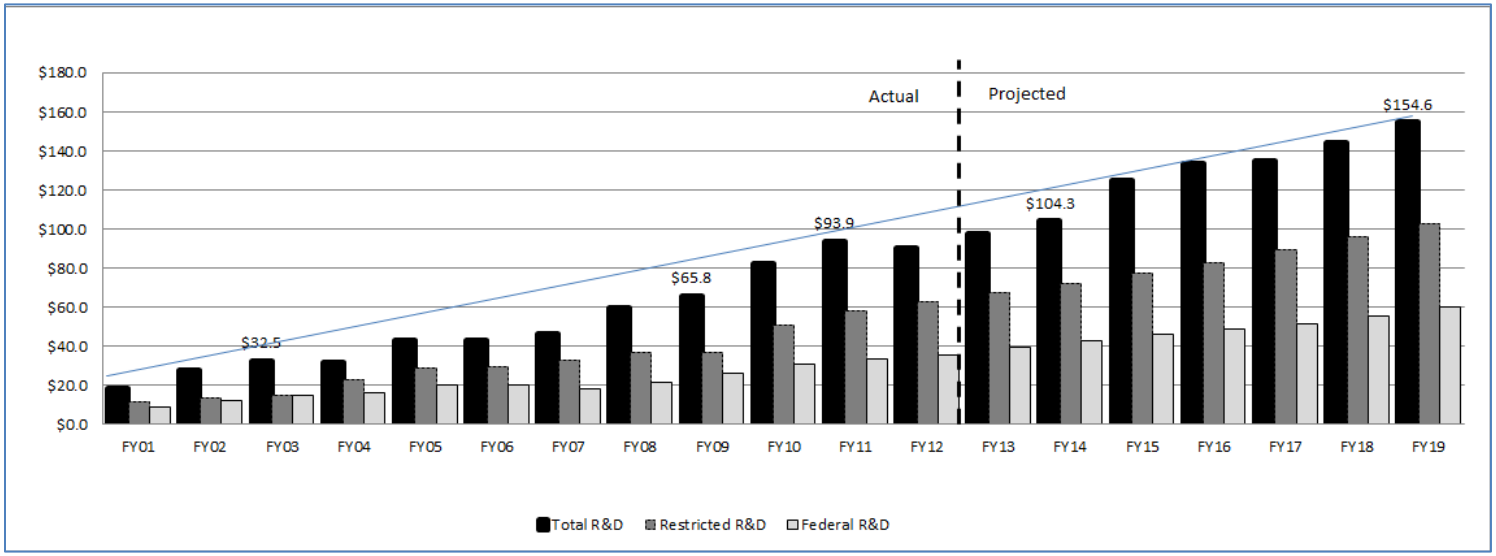

Figure 4. Past and Projected Trends in Federal and Restricted Research Expenditures.

Progress will be monitored each year in terms of faculty hires (number and percent hired in fields where externally funded research is expected), research grant submissions, research awards, research expenditures, major research centers, publications, publication citations, invention disclosures, patents filed, company start-ups or spin outs, undergraduate students engaged in research, and doctoral degrees awarded.

Research Priorities

The 2007 strategic plan goes into significant detail about specific research areas for investment. These include investments in existing strengths as well as new areas. In terms of existing research priorities, UT Dallas has established significant levels of research and expertise in several areas that warrant increased support, including:

- Analog technology – analog circuit design and simulation from DC to TeraHz.
- Behavioral economics – study of how social, cognitive, and emotional factors influence consumers, investors, and the overall economy.
- Control theory – control theory enables technologies ranging from robotics to energy efficiency.
- Cyber security – data mining, data protection, semantic web.
- Education research – the Texas Education Research Center and Texas Schools Project support independent, high-quality academic research and program evaluations through the use of individual level administrative data from Texas state education agencies as well as other sources of Texas education data.
- Geosciences – techniques to monitor the displacement of oil by water in reservoirs and tracking of carbon dioxide sequestered in depleted oil fields.
- Geospatial information science – study of geographic information systems, global positioning systems, and satellite-based remote sensing related to social, economic, and public health issues.
- Human language interface – speech synthesis, speech recognition and real-time data extraction.
- Nanoelectronics – electronic materials and devices for beyond-silicon CMOS technology.
- Nanotechnology –use of carbon nanotubes in structural and chemical applications, nanoparticles for targeted drug delivery, direct destruction of tumors, and improved contrast for magnetic resonance imaging (MRI).
- Neuroscience and cognition – development of tools and techniques to diagnose and treat brain-related conditions ranging from traumatic brain injuries to memory loss related to aging.
- Serious game technology – first-person cultural training for both defense and civilian applications based on techniques developed in the Arts and Technology program.
- Space science – design and fabrication of instrumentation, microsatellite systems, and data analysis tools for remote sensing of environmental changes.

The University has several well-established and successful research centers with strong potential for growth in external research funding:

- Alan G. MacDiarmid Institute for Nanotechnology
- Callier Center for Communication Disorders
- Center for Behavioral and Experimental Economics
- Center for BrainHealth
- Center for Vital Longevity
- Center for Global Collective Action
- Center for Lithospheric Studies
- CyberSecurity Research Center
- Sickle Cell Disease Research Center
- Texas Analog Center of Excellence (TxACE)
- Texas Schools Project
- William B. Hanson Center for Space Sciences

As UT Dallas adds new programs such as mechanical engineering, bioengineering, systems engineering, and emerging media and communications, the University will develop new areas of research expertise. Recent new hires have already started providing the foundation for these new research thrusts in:

- Bioinformatics – combining expertise in computer science and biology to develop core technologies for areas such as individualized health care and systems biology.
- Cognitive neuroscience – using the new technologies of fMRI and PET to understand how the developing and aging brain functions and how disorders of the brain might be treated make this one of the most exiting areas of discovery for the next decade.
- Energy harvesting and energy storage – expanding activities in control theory and nanotechnology to advance the capture of wind energy and the storage of electrical energy.
- Medical devices – bringing together analog technology, microfluidics, silicon devices and biology to create new classes of medical devices for diagnosis and therapy, ranging from cancer to neuroscience.
- Mobile media – combining activities in arts, technology, and emerging media to develop mobile internet advances that drive electronic social networking.
- Neuro-engineering – developing new technologies based upon advanced understanding of the nervous system hold the promise of treating such diverse problems as Parkinson's disease, chronic pain, and Post Traumatic Stress Syndrome.
- Polymer chemistry – organic polymers used for innovative applications such as flexible computer displays, structural materials, consumer products, and biomedical devices.
- Systems engineering – adding to expertise in supply chain management, logistics and computer science to develop analytical models and tools for engineering and managing large projects.

Allocation of Resources

UT Dallas has calculated the cost of expansion and compared this cost with projections for new revenue. Current funding levels from general revenue appropriations and current tuition and required fees for students are assumed to scale with inflation over time.

The projected new annual income and expenses ten years hence, expressed in 2009 dollars, are summarized in Tables 6 and 7. Projected new annual revenue in ten years is $115M, which exceeds the projected new annual expenses of $105M. Projected income and expenses are in balance. The business model is solid – growth in enrollment and research will produce proportional growth in faculty and provide the financial means to pay for the overall growth plan.

Table 6. Projected Additional Annual Income from New Revenue Sources in Ten Years.

Source of Additional Income	Projected New Annual Income	Comments
Increased Enrollment	$69M	New income from general revenue appropriations and tuition/required fees resulting from growth; does not include tuition set-aside for financial aid or fees dedicated to student services, athletics, housing, dining, and other non-academic or research related functions
Technology Commercialization	$3M	Licensing fees and income from ownership stake in start-up companies
Additional indirect cost income from increased research	$12M	Based on planned growth of federal and industry-sponsored research
National Research University Fund	$10M	An estimate of potential income from this new fund
Research University Development Fund	$7M	Assumes that total research will increase by $70M over ten years and continuation of the RUDF program
Research Development Fund	$4M	Estimated based upon research growth
Income from Increased Endowment	$7M	Based on planned growth of $150M in endowment, at 4.75% return
Start-up (STARS) funds from UT System	$3M	Assumes that this program will continue
TOTAL	**$115M**	

Table 7. Projected New Annual Expenses in Ten Years.

New Expense	Projected New Annual Expenses	Comments
New faculty members, support staff, and operating costs (staff, instructional resources, labs, equipment, IT, security, utilities, and building maintenance)	$67M	Assumes growth to 610 tenured and tenure-track faculty members and an increase in enrollment to 22,000 total students – cost determined by scaling current expenses to reflect growth
Research support staff	$3M	25 new individuals such as instrument technicians, computer support staff, and research scientists
Student support (merit based scholarships for undergraduate students and fellowships for graduate students)	$10M	Increased enrollment will require additional student support and increased engagement of undergraduates in research; growth in need-based aid is separately budgeted from financial-aid set-aside
Start-up costs for new faculty	$8M	Assumes $500,000 per faculty member for an estimated 16 new faculty members per year engaged in externally funded research
Increased library staff support (does not include increases for library acquisitions, which are paid from a separate fee)	$3M	Assumes additional 30 staff members to support enhanced library research capacity
Debt service for new buildings	$14M	Assumes that debt service for two-thirds of all new academic and research space required (400,000 sq ft) would be paid by UT Dallas.
TOTAL	**$105M**	

The principal source of new revenue is derived from enrollment growth. In fact, enrollment growth drives the business plan. If enrollment growth is faster or slower than projected, the need and ability to hire faculty, start new programs, construct new buildings, etc., is increased or decreased. The planned growth over the next 10 years is similar to growth over the past 10 years.

As noted in Table 6, $69M of new income from enrollment growth does not include student service fees, athletic fees, room and board, and other auxiliaries. UT Dallas assumes that all these services will scale up as more students enroll, that new residence halls will be constructed, etc. Students will benefit from a larger university because they will have a broader array of facilities, many more student organizations and services, and more "college life" opportunities from which to choose.

In terms of expenses, UT Dallas currently spends about $160M per year to operate the University. This includes not only salary and fringe benefits for faculty members, but also support staff (teaching assistants, graders, instructors, administrative support staff, information technology support staff, maintenance personnel, police force, etc.), operating expenses (computers, printers, supplies, postage, phone, utilities, etc.), and building operating and maintenance costs. As UT Dallas grows, it will enjoy the associated economies of scale – it will still need just one president, one provost, one engineering dean, etc. The aggregate of new annual operating costs (salaries, benefits, operational expenses, and building maintenance costs) is estimated to be $67M, determined from scaling the $160M of current costs for increases in faculty, students, staff, and space.

Cost containment is very important at UT Dallas and will become even more important in the future. Emphasis has been given to promoting a culture of improved efficiency under the "Lean University" program. This program finds efficiencies by examining processes that require multiple steps and/or people and eliminating unnecessary or wasteful steps. Implementation allows improved productivity and reduced unit costs.

New Buildings

As of May 2012, UT Dallas had a 3.3 million gross square feet of space, including academic space, residential housing, recreational facilities, and other space. Of this, 1.33 million square feet is academic and research space, including the library. The current academic space works out to be 90 square feet per FTE student and about 3,000 square feet per T/TT faculty member.

UT Dallas and nearly all other Texas higher education institutions are currently suffering from a deficit in academic and research space, according to The Texas Higher Education Coordinating Board (THECB). The THECH reports that UT Dallas has a shortage of 830,000 square feet of academic space, with the total state deficit exceeding 15 million square feet. It will take many years to address this deficit. In its planning, UT Dallas has used the following, typical of current status, for calculating space goals:

- 100 gross square feet of academic space per FTE student, and

- 3,000 gross square feet of academic space per T/TT faculty member.

The University of Texas at Dallas currently has four academic buildings either under construction or in early design:

- Art and Technology Building, 155,000 ft^2, completion in 2013,
- Addition to School of Management, 110,000 ft^2, completion in 2014,
- Bioengineering and Sciences Building, 220,000 ft^2, completion in 2015, and
- Engineering Research Center, 50,000 ft^2, completion in 2015.

The four buildings total 535,000 ft^2. At the current square-foot requirements per student and faculty, 535,000 square feet of new space will accommodate 5350 new FTE students and 178 new T/TT faculty members, which should be sufficient space to meet growth needs for students and faculty until Fall 2018.

For the next several years, the academic and research space needed to accommodate growth should be constructed, although the space deficit remains unaddressed. To address the near-term deficit in academic and research space, UT Dallas is considering temporary buildings and leasing or purchasing vacant space near campus.

Beyond Fall 2018, additional space will be needed, probably no later than 2018 to 2019, which means that the space will have to be authorized by 2014 or 2015 at the latest. It is reasonable to expect that the State of Texas will have a capital program before the end of the decade. It is also reasonable to assume that the PUF will occasionally fund new buildings for UT Dallas, that internal funding through the Revenue Financing System can occasionally bear the cost of new buildings (likely funded from increased indirect cost recovery from externally funded research), and that private giving will play a role for some future buildings.

Student Participation

UT Dallas currently offers a number of programs that enhance student opportunities to participate in research at the undergraduate level. These include:

- **Undergraduate Research Scholar Award Program -** UT Dallas strongly encourages student engagement in the research work of the University by awarding undergraduate students research scholarships. Awards are made on a competitive basis and consist of a cash stipend of $500 paid to the student, as well as an award of $300 to support the research project (e.g., laboratory equipment, poster printing, project travel, etc.). For 2012, 70 undergraduate students received awards. UT Dallas expects to continue to expand the program over time.

- **Collegium V Honors Program -** The University offers a four-year comprehensive program of enrichment and recognition, known as Collegium V, for outstanding students. Students graduating from Collegium V must complete a senior project or senior thesis based upon research in a laboratory or under the supervision of a faculty member. A number of students have participated in research through internship opportunities on and off campus, including undergraduate programs sponsored by Los Alamos National Laboratories, Sandia Labs in Albuquerque, NASA in Houston, and UT Southwestern Medical School. Students have also engaged in research for think tanks in Washington, D.C., such as the American Enterprise Institute, the Heritage Foundation, the Middle Eastern Institute, and Justice at Stake through the Bill Archer Washington Internship Program.

- **Green Fellows Program -** Offered jointly by UT Southwestern Graduate School of Biomedical Sciences (http://www.utsouthwestern.edu/graduateschool/index.html) and UT Dallas, the Green Fellows Program provides a semester-long intensive research training experience that leads to an understanding of the planning, discipline, and teamwork involved in addressing basic research problems in the biological sciences. Green Fellows pursue individual research projects under the direction of the graduate school faculty at UT Southwestern.

- **The Clark Summer Research Program -** First-time freshman who receive an Academic Excellence Honors Scholarship or National Merit Scholarship may apply for one of twenty Anson L. Clark Summer Research Program positions awarded annually. This program provides the opportunity to work with members of UT Dallas' science and engineering faculty for a period of ten weeks for $2,000. At the conclusion of the program, each scholar summarizes his or her research and presents it at a University-sponsored research conference.

- **Disciplinary Academic Honors -** Each school offers qualified students the opportunity to participate in an honors program within their discipline. All students must have completed a minimum of 30 graded semester credit hours to qualify for major honors. Most programs require students graduating with honors to complete an undergraduate thesis under the supervision of a faculty committee. This includes chemistry, biochemistry, mechanical engineering, software engineering, computer engineering, mechanical engineering, and computer science.

Technology Commercialization

The University of Texas at Dallas believes that research should benefit society and that technology commercialization is integral to maximizing this positive impact. To that end, the University reorganized its technology transfer operations in 2008, creating the Office of Technology Commercialization (OTC) to begin establishing UT Dallas as a leader in technology licensing, start-up creation, and industrial collaboration. Under the leadership of a new Associate Vice President for Technology Commercialization, the office has

established a customer service-oriented culture focused on educating faculty and facilitating the movement of technology from the lab to the marketplace.

In collaboration with the UT Dallas Institute for Innovation and Entrepreneurship, OTC hosts quarterly Research and New Venture Showcases to highlight the synergies between faculty research and local high-tech companies and conducts Entrepreneurship Boot Camps to educate faculty members and graduate students in the basics of developing a new business. In addition, OTC has developed relationships with entrepreneurs, investors, and legal counsel forming a network of experts who assist in the evaluation and commercialization of University technologies.

The developing commercialization culture at UT Dallas has already produced tangible benefits to the University. The visible focus on technology commercialization has enhanced the attractiveness of the University to entrepreneurial faculty recruits, with several recent hires citing UT Dallas' commercialization philosophy as a key reason for joining the faculty. In addition, the University's growing reputation as a capable and uncomplicated collaborator with industry has allowed UT Dallas to enhance its research funding from sources including SBIR and STTR grants and the State's Emerging Technology Fund, which would otherwise be inaccessible to a university. As the University grows, it will continue to enhance its technology commercialization infrastructure with the goal of commercialization becoming an integral and seamless component of the UT Dallas research enterprise. In 2011 UT Dallas opened the Venture Development Center (VDC) to provide start-up space for UT Dallas spin-out companies. There are currently 13 companies in the VDC. Spin-out companies from UT Dallas over the past 4 years have created 50 jobs in the area, and have contributed over $3M in funded research back to the University.

Over time, UT Dallas anticipates that a research and commercialization park will likely emerge on or near campus, funded either by the University or private interests. Given the focus of UT Dallas on research, and the intense concentration of technology companies in North Dallas, the opportunity for commercialization of technologies and the creation of new companies from UT Dallas' work and people is very high.

PLAN TO IMPROVE UNDERGRADUATE EDUCATION

Institution's Plan to Improve the Quality of Undergraduate Education

UT Dallas plans to expand and enhance its programs designed to provide high-quality undergraduate education to an increasing number of Texas' best high school graduates. These students arrive at UT Dallas both as first-time-in-college freshmen and as highly qualified community college transfer students. The strategies that underpin this plan range from merit-based scholarships designed for academically stellar freshmen to programs for students of potential who were not adequately prepared in high school to programs for community college transfer students. Through these varied programs, UT Dallas is committed to providing an atmosphere that encourages diversity. In all cases, this plan focuses on recruiting and retaining able and ambitious students who are attracted to the challenges of our rigorous and innovative curricula and instruction.

The profile of undergraduate students at UT Dallas includes successive freshmen classes that rate among the best in Texas. UT Dallas also places a specific priority on the recruitment and successful graduation of transfer students. This plan continues the 2007 goal of improving four and six-year graduation rates for freshmen. Today, the four-year graduation rate for freshmen is 51% and the six-year rate is 64%; the ten-year plan is to raise these rates to 55% and 72%, respectively.

Merit-based scholarships are a major component of the UT Dallas recruitment strategy. The University's Academic Excellence Scholarship Program awards financial aid based on high-school records of rigorous curriculum, grades and class rank, and SAT/ACT scores. Awards range from $2000 offsets for tuition and fee charges to full coverage of tuition and fees, housing, and living expenses. The highest level of these scholarships is designated for National Merit Scholars. The National Merit Scholarship Corporation (NMSC) recognizes UT Dallas as a collegiate sponsor, and National Merit Finalists who list UT Dallas as their first choice with NMSC receive eight semesters of full conventional scholarship support plus support for international study. The Academic Excellence Scholarship fund contains specific allocations for students recognized by the National Achievement Scholarship Program, conducted by the NMSC. Similarly, UT Dallas recognizes students identified by the National Hispanic Honor Awards Program through The College Board. A similar, separately funded, merit-based scholarship program is reserved for transferring community college students with excellent academic records.

Two other scholarship programs, funded with endowment and foundation support, operate in concert with the Academic Excellence Scholarship Program: the Eugene McDermott Scholars Program and the UT Dallas Terry Scholars Program. Students eligible for these programs are subject to extremely extensive evaluation criteria including evaluations of service and leadership attributes.

Comet Connection, an innovative program designed to help transfer students by allowing them to lock in UT Dallas tuition at today's rates, now has partnerships with all 50 Texas public community colleges, as well as with the two private community colleges in the state. Created to help students and their families budget for college, Comet Connection guarantees four years of fixed tuition and fees and other enrollment benefits at UT Dallas. University recruiters actively promote this program with recruitment publications, direct mail and placement staff at community colleges.

The Academic Bridge Program, started in 2000, recruits urban high school students with high class rankings who may nonetheless be lacking exposure to the full college preparation curriculum. SAT scores for these students are typically in the 1000 range. In a typical entering class of Academic Bridge students, 65% are Hispanic or African-American; most are first-generation college students. These students graduate from UT Dallas at a rate higher than state or national averages. Students are eligible for scholarship and other assistance.

STARRS (Supporting the Transition to Achieve Recruiting and Retention Success), a new program for students in the Erik Jonsson School of Engineering and Computer Science, aims to help underrepresented students navigate and succeed in traditionally challenging engineering and computer science courses at the University. The program's components include scholarships, mentoring by established students and industry partners, and a head start summer program that allows students to complete six to seven hours of coursework that applies toward their degree requirements or prerequisite classes in the summer after their high school graduation.

The Multicultural Center under the direction of the Office of Diversity and Community Engagement has also been involved in meeting the "*Closing the Gaps"* goals. The Comet S.T.A.R.S. (Success through Academic Resources and Support) program was created in 2006 for first-year students and especially targets students who are members of underrepresented groups. This program is designed to increase academic success and encourage campus involvement through peer-to-peer mentorship. Each year, students are paired with qualified upperclassmen to provide them with academic support and positive role models of successful college life. Although the formal mentorship lasts one year, the bond formed is often maintained throughout the protégés' academic career.

As these programs evidence, UT Dallas is committed to providing leadership in the *"Closing the Gaps"* effort particularly in many of the science, technology, engineering, and mathematics (STEM) disciplines, which are core strengths of the University. Among the programs and opportunities described here, Academic Bridge, the Comet Connection, STARRS and the Terry program address gaps in access and means to college attendance, and provide focused, concentrated mentoring to students who are at greater risk of failing to graduate. The Office of Diversity and Community Engagement has also developed pre-college initiatives targeting underrepresented student populations from area high schools. The goal is to maintain the caliber of undergraduate students whose academic performance, persistence, graduation rates, professional and graduate school placements, and vocational success are among the best of all Texas institutions of higher education.

Further Improvements

The Office of Distinguished Scholarship is a resource available to all UT Dallas students. The Office is committed to helping students realize their fullest intellectual potential and compete at the highest levels for academic grants and scholarships. It publicizes scholarship opportunities, recruits potential candidates, and works closely with candidates as they complete the often-arduous application process. In addition, the office is committed to communicating with students, beginning in their freshman year, about their personal academic and career goals, and aiding them in the development of their intellectual *persona* over the course of their undergraduate years. In recent years, UT Dallas undergraduates have received distinguished awards including the Harry S. Truman Scholarship, the Barry Goldwater Scholarship, the Fulbright Fellowship, the Marshall Scholarship, the Critical Language Scholarship, the Boren Scholarship, and the National Institutes of Health – Oxford Cambridge Scholarship.

The Office of Student Success and Assessment (OSSA) promotes continual improvement of education and research by providing students with a diverse array of academic strategies and by collaborating with other UT Dallas schools and departments toward enhancing program and unit assessments. OSSA offices, classrooms, and a multi-purpose computer lab are centrally located within the UT Dallas Conference Center and include the GEMS Lab, Math Lab, and Writing Center.

Gateways to Excellence in Math and Science (GEMS) is UT Dallas' comprehensive plan to enhance the quality of student learning in mathematics and science by providing students with innovative, intensive, and active learning experiences both inside and outside the classroom. The project targets success, retention, and persistence in gateway math and science courses that play a critical role in influencing student decisions to continue studies in degree programs heavily grounded in mathematics and the sciences as well as to continue their college careers. GEMS involves a series of interventions, including curriculum alignment and realignment, course redesign, new course design, the introduction of new modes of curriculum delivery, and faculty development. The overall objectives of GEMS are to provide a foundation and locus for sustainable faculty and administrative activities that will (a) increase the retention of students in science, technology, engineering, and mathematics (STEM) fields; (b) decrease the number of 'D' grades, 'F' grades, and withdrawals in STEM classes; and (c) create supportive, engaging learning opportunities.

The Office of Educational Enhancement leads, coordinates, and supports the University initiatives related to assessment, faculty development, instructional technology, and distance education campus-wide in key areas of UT Dallas' mission and strategic plan for students, faculty, and staff through policy, processes, and professional development in collaboration with the campus community for continuous evaluation and improvement.

Plan to Increase the Numbers of Baccalaureate Degrees

As noted in the preceding discussions, UT Dallas continues to have a dominant institutional profile in science, engineering, and business. Current and planned efforts to further increase the numbers of graduates in critical fields are based on still more intensive recruitment of students for the existing degree programs and, concurrently, the development of new degree programs in the science and technology areas.

Some new undergraduate degrees that have been initiated or are in preparation include:

- Actuarial Science (Active)
- Arts and Technology (Active)
- Biochemistry (Active)
- Biomedical Engineering (Active)
- Biophysics (In Preparation)
- Geospatial Information Sciences (Active)
- Mechanical Engineering (Active)
- Neuroscience (Active)

The University has placed major emphasis on providing the additional math and science teachers that Texas schools urgently need. This is occurring through partnership with the UTeach program. UTeach Dallas is devoted to recruiting, developing, and retaining a new generation of math, science, and computer science teachers. The UTeach program affords students the opportunity to explore the profession of teaching math, science or computer science with little time and financial commitment beginning their freshman year.

PLAN FOR DOCTORAL PROGRAMS

Existing Doctoral Programs

Table 8 lists UT Dallas' existing doctoral programs, their implementation date, and the average annual graduation number based on a three-year average. At present, UT Dallas offers 30 doctoral programs, including 29 PhD programs and one Doctor of Audiology degree.

UT Dallas has breadth in strong doctoral programs; the top five graduate-producing programs span three schools. The two most productive programs in terms of degrees awarded are computer science and management science. Electrical engineering boasts high graduate output as well, averaging 10.7 graduates annually the last three years.

The Coordinating Board's responses to three-year and annual progress reports of UT Dallas' doctoral programs regularly commend persistence rates, student performance, overall faculty productivity, and financial support. However, a common weakness that has been identified across many doctoral programs is ethnic diversity. UT Dallas has made an institution-wide commitment to increase student and faculty diversity with the recent establishment of the Office of Diversity and Community Engagement. Programs at all levels are expanding recruitment efforts of underrepresented students and are also engaging in post-enrollment retention support programs with the Vice President of Diversity and Community Engagement.

Quality Control. UT Dallas has ten doctoral programs that average fewer than two graduates per year for FY 2006, 2007, and 2008; however, four of those ten programs have not yet been in existence for six full years. As noted by the Coordinating Board staff in letters regarding UT Dallas' third-year or annual progress reports, the newer programs are

exceeding initial enrollment projections and have quality faculty productivity. In addition, a recent policy change to the graduate catalog that reduced the minimum number of hours to graduate with a doctoral degree (from 90 to 75) will assist graduate output for all doctoral programs. UT Dallas will consider issues of cost, need, and current enrollment to develop action plans to increase productivity for programs the University wishes to retain.

Table 8. Existing Doctoral Programs at UT Dallas.

Program Name	Date Implemented	Annual average of graduates FY10-12*	Projected Graduates in 2019
Geosciences	1969	2.7	4
Physics	1969	5.0	7
International Management Studies	1974	2.0	3
Management Science	1974	12.7	19
Mathematical Sciences - Applied Mathematics	1974	2.3	4
Mathematical Sciences - Statistics	1974	3.3	4
Humanities	1975	1.0	5
Public Policy and Political Economy	1975	9.0	12
Chemistry	1983	5.7	11
Computer Science	1983	24.0	20
Humanities - Aesthetic Studies	1983	6.0	10
Humanities - History of Ideas	1983	3.0	4
Humanities - Studies in Literature	1983	7.3	7
Electrical Engineering	1990	23.0	24
Electrical Engineering - Microelectronics	1990	6.0	3
Biology - Molecular and Cell Biology	1991	4.3	8
Audiology (Au.D.)	2001	8.3	11
Computer Engineering	2002	3.0	3
Software Engineering	2002	2.3	3
Telecommunications Engineering	2002	2.3	4
Economics	2003	5.0	5
Political Science	2003	5.0	6
Cognition and Neuroscience	2004	5.3	9
Communication Sciences and Disorders	2004	2.0	7
Psychological Sciences	2004	4.3	5
Public Affairs	2004	17.3	19
Geospatial Information Sciences	2005	3.0	4
Materials Science and Engineering	2006	5.7	8
Criminology	2007	3.0	8
Biomedical Engineering	2010	new	5
Arts and Technology	2010	new	4
Mechanical Engineering	2011	new	4
TOTAL		**183.9**	**250**

* Three-year trailing average.

Quality Enhancement. In order to sustain a program with the potential of national prominence, faculty members supporting the program must be engaged in research, actively publishing, or contributing other creative or scholarly works. Scale also is a major factor in building stronger programs, and as UT Dallas hires more faculty who, in turn, perform more and better research, the overall strength of doctoral programs will improve.

Faculty members submit annual reports to the Office of the Executive Vice President and Provost detailing, among other achievements, their research productivity and publications. The reports are used by department heads, deans, and the provost to identify faculty whose performance level does not match that of the program's general performance level, and any such faculty members are offered mentoring and other support services. In addition, the Office of Research offers faculty assistance in writing grant proposals.

In addition to faculty productivity that promotes student involvement in research projects, UT Dallas will also benchmark its programs against national peers as discussed later. Finally, as discussed below, UT Dallas will regularly evaluate the overall effectiveness of each doctoral program using both a formalized external review process and an internal dynamic assessment process.

Comparison with National Peers. See Appendix B.

New Doctoral Programs

Areas of Emphasis. Table 9 identifies the future doctoral degrees UT Dallas plans to request for implementation over the next ten years. These new degree programs are expected to lead to 29 new doctorate degrees per year in ten years and far more in the succeeding ten years as the programs grow and mature.

When determining which degree programs to develop, UT Dallas considers local, regional, state, and national student and job market demand. The Bureau of Labor Statistics' job outlook projections for 2008 are reviewed as is student enrollment at the state and national levels. Although the national job market demand is not especially strong for mechanical and chemical engineering, a shortfall in doctoral graduates exists in DFW and in Texas. As illustrated by Table 9, UT Dallas plans to increase its doctoral programs predominantly in its School of Natural Science and Mathematics, home to many of the University's founding programs, and the Erik Jonsson School of Engineering and Computer Science, the fourth-ranked graduate engineering school in Texas according to *U.S. News & World Report* rankings of graduate programs. Many of the planned doctoral programs are supported by existing strong undergraduate and master's programs.

When considering new doctoral programs, UT Dallas gives heavy emphasis to programs that are natural extensions of existing programs. Chemical engineering, for example, is relatively easy to add given current strengths in chemistry and rapidly expanding capabilities in materials science and engineering as well as developing expertise in biomedical engineering.

All of the programs in Table 9 have these types of natural connections to existing faculty members and programs.

Table 9. Planned Future Doctoral Programs at UT Dallas.

Program Name	Year	National employment base and 10-yr trend, Bur. Labor Statistics	Projected Graduates in 2019
Science/Math Education	2010	Data unavailable	4
Educational Administration	2012	445,400; +8%	5
Speech Pathology	2013	119,300; +19%	3
Biostatistics	2013	22,600; +~13%	2
Systems Engineering and Management	2014	Data unavailable	2
Urban and Regional Planning	2015	38,400; +19%	2
Communications	2015	Data unavailable	3
Chemical Engineering	2016	31,700; (-2%)	NA
Biophysics	2017	15,600; +~21%	NA
Environmental and Civil Engineering	2018	ENV: 54,300; +31% CIV: 278,400; +24%	NA
Atmospheric Science	2019	9,400; +15%	NA
Actuarial Sciences	2019	19,700; +21%	NA
TOTAL			**21**

As illustrated by Figure 5, UT Dallas has seen considerable growth in the number of doctoral graduates in the past ten years. The University's plan to add 14 more programs by 2019 is consistent with the past growth rate. The combined projected graduates for 2019 total 240 doctoral degrees awarded (211 from existing programs and 29 from new programs).

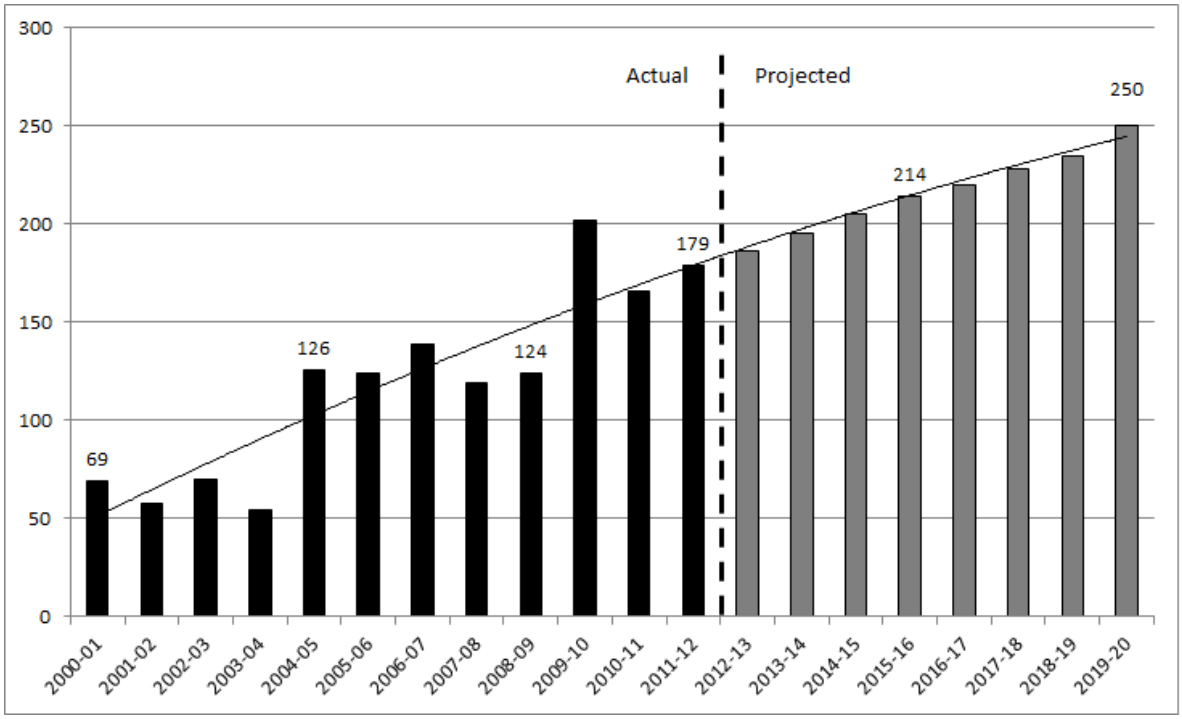

Figure 5. Numbers of Doctorates Awarded 2000-2001 to 2011-2012 and Projected to 2019-2020.

Assessment. Internal and external reviewers assess all UT Dallas academic programs approximately every five years. UT Dallas' Policy Memorandum 94-III.24-63, Academic Program Review (http://provost.utdallas.edu/policy/utdpp1013), governs this periodic review of academic programs and charges the review team to provide an "assessment of the goals, plans, staffing, resources, existing and potential strengths…and those areas needing improvement" to determine the program's viability. The process includes a review team that typically is composed of at least three individuals from other institutions that have programs similar to those of the unit under review, at least two members from the UT Dallas faculty, and a member of the program review committee who is not affiliated with the program being reviewed. The review team evaluates the unit as requested by a written charge that instructs them to "[e]valuate the quality, the effectiveness, and the efficiency of the undergraduate and graduate curricula and the delivery of instruction," as well as to evaluate the appropriateness of its assessment plans and student learning outcomes.

In accordance with the guidelines and instructions issued by the provost, the unit undergoing review prepares a comprehensive self-study document and sends it to the review team prior to its on-campus visit. Before leaving the campus, the team holds exit interviews with the unit's faculty and administration, the provost, the president, and other appropriate senior administrators. The review team summarizes its immediate impressions and provides a forecast of its eventual written report. After the chair provides the provost with the final report, the unit under review provides its written response to the review team's recommendations and conclusions. The provost then prepares final recommendations to the

president to complete the review. In the years between reviews of the unit, the results of the program review are used when making decisions on budget, staffing, curricular and degree changes, and allocation of special resources.

In addition to the rigorous external periodic review of all doctoral programs, UT Dallas regularly assesses each doctoral program using an institutional-wide online assessment tool. This assessment report includes program mission statements, program-specific student learning objectives, measures to achieve those objectives, findings that evaluate the criteria of success, and future action plans to improve upon the findings. Faculty, program heads, and deans use the assessment report to identify areas that need improvement and to make necessary adjustments. Finally, UT Dallas uses the Coordinating Board's *18 Characteristics of Texas Public Doctoral Programs* as a guide to assess the quality of its doctoral programs.

Regional Impact. UT Dallas' strategic plan includes initiatives that reflect a substantial responsibility to interface with the DFW Metroplex. To attain this goal, UT Dallas is committed to establishing collaborative programs with UT Southwestern and UT Arlington. The recently approved biomedical engineering degree is an example in such collaborative efforts of the schools to transform the Metroplex into a global leader in biomedical research. Likewise, the joint PhD program in Mechanical Engineering between UT Dallas and UT Arlington will provide significantly more opportunities for our students than either program could provide on its own.

Dallas-Fort Worth is one of the world's leaders in technology delivery businesses, including aerospace, defense systems, information technology, micro and nano electronics, telecommunications, and many others. There is a tremendous appetite for leading academic research to produce discoveries and to provide the human talent needed. This appetite extends across nearly all areas of physical sciences and engineering.

Additionally, the area is a fast-growing center for biotechnology, bioinformatics, medical devices, and the life sciences and has 38 basic chemical manufacturing facilities, 32 pharmaceutical and medical facilities, 215 medical equipment and supply facilities, and 170 scientific R&D firms. With the selection of its future doctoral degree programs and research, UT Dallas is well poised to meet the Metroplex's needs and to help the entire region to advance. The impact of this will be monitored internally by the Office of Research and the schools and externally through industrial advisory boards and other such local partnerships.

PLAN FOR FACULTY AND STUDENT DEVELOPMENT

Faculty Research

UT Dallas already does much to encourage faculty to be productive, innovative, and effective in their teaching and research. As the data presented earlier demonstrate, the research productivity of those faculty members who are engaged in externally funded research is already good. Strong research productivity is found elsewhere across the University even where opportunities for funding are limited. For example, the School of Management (SOM) is one of the nation's most productive business schools in terms of research. Recent rankings for SOM from 2009 include #1 professional part-time and #1 public executive MBA program in Texas (*Business Week*), #20 worldwide in faculty research productivity (*Financial Times*), and #7 in number of publications in the journals of *Management Science and Operations Research*. Also as indicated earlier in Table 2, the production of doctorate degrees on a per-faculty-member basis compares very favorably with the group of benchmark universities.

UT Dallas provides faculty members numerous opportunities to enhance their research, teaching, and service through participation in institutional programs that promote professional development. This support is expressed through a variety of programs and policies encouraging faculty members to add to their knowledge, to contribute to the expansion of understanding in their academic fields, to become more effective teachers, and to enhance their pedagogy by making use of advanced technology. Specific faculty development opportunities available at UT Dallas include special faculty development assignments (SFDA), faculty leaves of absence, the faculty-mentoring program, new faculty orientation, the University compliance programs, various programs sponsored by the Office of Research, faculty resources for distance learning, and opportunities facilitated by the Office of Educational Enhancement.

Faculty Recognition

The University has benefited from endowed professor and chair positions, many of which have existed for many years. Ninety UT Dallas faculty members hold such positions. This puts UT Dallas in a position to offer endowed faculty positions to approximately 20% of its 493 tenured and on-track faculty members, which is a reasonable percentage to be nationally competitive. The University must add approximately 40 to 50 new endowed positions over the next ten years to keep pace with the growth in faculty and to maintain or enhance its percentage of faculty with endowed positions.

Collaborations and Partnerships

Many UT Dallas faculty members have collaborations with leading academicians around the world that have been developed on an individual level. There are also several applications at the University level that are associated with research centers. Examples of collaborations are:

- Advanced Imaging Center (AIC) – One of the most advanced medical imaging centers in the world is located at UT Southwestern Medical Center. The AIC is built on the expertise of scientists from UT Southwestern Medical Center, UT Dallas and UT Arlington. Many of the Center for BrainHealth and Center for Vital Longevity faculty are associated with AIC.

- Biomedical Engineering PhD program – UT Dallas recently joined with UT Southwestern and UT Arlington in offering a joint PhD to further serve the growing need in biomedicine and bioengineering.
- Medical Technologies Consortium – Texas Instruments, Texas Health Resources, UT Dallas, UT Arlington and the UNT Health Science Center have combined resources to fund seven research projects to develop medical devices, where the projects are joint development programs between UT Dallas and UT Arlington faculty members.

- Texas Schools Project/Texas Education Research Center – UT Dallas joined with a group of 19 Texas school districts and educational research organizations in founding the Texas Consortium on School Research. This project aims to allow members from districts across the state to collaborate in building research capacity to address critical issues to support improvement efforts.

- TxACE (Texas Analog Center of Excellence) – >$20M collaboration funded by industry and State of Texas to design next generation analog and high frequency circuits. Universities involved in TxACE include UT Austin, Texas Tech, Texas A&M, SMU, Arizona State University, Stanford, and others.

New Faculty

The plan to hire new faculty is discussed earlier, under "Plan to Increase Research Funding and Productivity." However, it should also be mentioned that in addition to hiring faculty members into specific academic units, UT Dallas will also initiate a "cluster hiring" program in which faculty members are recruited for major research centers regardless of their academic discipline. For example, the Alan G. MacDiarmid Institute for Nanotechnology is a highly successful center consisting of faculty members from several departments. UT Dallas will recruit talent into interdisciplinary fields through an interdisciplinary process that compliments school-based recruiting.

Student Awards

The University of Texas at Dallas offers numerous student awards, with strong emphasis on merit-based scholarships, awards to support undergraduate research, and numerous others described earlier. These awards will expand in number and scope as UT Dallas grows.

Student Diversity in Doctoral Programs

The University of Texas at Dallas is fully committed to strong diversity programs aimed at ensuring diversity within student, staff, and faculty ranks. An Office of Diversity and Community Engagement was created in 2008, with a newly created vice president position for leadership, to provide the programs and investments needed to accomplish the goal. Newly created programs include a faculty-mentoring program and student-recruiting program.

Table 10 summarizes the ethnicity of doctoral recipients of the past five years. UT Dallas, like nearly all science- and engineering-focused institutions, has international doctoral students making up a large percentage of those graduating from the institution. The percentage of Hispanic and African-American students each stand at about 3% of the total. UT Dallas will launch new programs to increase the flow of students into these programs. This will principally be accomplished through more aggressive recruiting at local and national meetings, partnerships with institutions who might supply UT Dallas with more students who will strengthen diversity, fellowship programs, strong mentoring and engagement programs on campus and within the community, and stronger communication as part of the recruiting process.

Table 10. Summary of Diversity of Doctoral Recipients from FY05 – FY09.

Ethnicity	**Number**	**Percent**
Asian	33	5.2%
African-American	21	3.3 %
Hispanic	19	3%
International	330	52.2%
Native American	2	0.3%
White	227	35.9 %
TOTAL	**632**	**100 %**

OTHER RESOURCES

Research Facilities

Research infrastructure is an important ingredient for a successful research university in many ways. State-of-the-art infrastructure is an absolute necessity to carry out innovative research, but it is also required to recruit the very best faculty, post-docs and students. Because UT Dallas has a strong emphasis in the physical and life sciences and in experimental engineering, there is a corresponding need for extensive research facilities. There are the usual individual faculty research labs distributed across campus in their departmental homes. In addition, the University has several unique facilities that have been established to carry out research.

The Natural Science and Engineering Research Laboratory building is approximately 192,000 square feet and provides laboratory space for approximately 40 different research groups across many disciplines. The building is also home to many core facilities, including the 5000-square-foot clean room for micro and nano device fabrication, the animal care facility, and the nano-characterization facility, which includes two state-of-the-art transmission electron microscopes, a dual beam focused ion beam system, and a time-of-flight secondary ion mass spectrometer. The Alan G. MacDiarmid NanoTech Institute houses equipment for imaging, thermal and mechanical analysis, optical spectroscopy, and fuel cell testing and magnetic property measurement. The TxACE analog design and testing lab is being built in the Engineering North Building and will be home to the most complete analog testing facility in the country, with the ability to measure signals from DC to a THz. We are in the design phase of a new biosciences building which will add approximately 220,000 square feet, We should break ground for the new bioscience building in Jan. 2014, with a completion date of Aug. 2015.

Another important shared research facility for the University is the Advanced Imaging Center, which is physically located at UT Southwestern Medical Center. UT Dallas has significant computational resources with several multi-core clusters on campus. Faculty can access additional computational resources via the Texas Advanced Computer Center.

Library Resources

UT Dallas has made significant improvements in the quality of library services and collections over the past ten years. The size of the collections has been enhanced through consortial purchasing and shared access to resources across the UT System. In addition, the purchase of electronic collections of historic materials has increased the acquisition of older materials.

In 2009, the McDermott Library housed 2,643,393 volumes, 2,871,176 microform units, 14,411 videos and DVDs, 28,476 maps, and 213,695 government documents. Perhaps more importantly in this electronic age and given UT Dallas' emphasis on technology, the McDermott Library's collection of electronic journals has grown to over 66,393. The library also owns 1,094,541 electronic books and through the Web offers faculty and students access to many more. The McDermott Library is a partial federal repository for federal and state government documents. Although the collection totals at McDermott Library are still rising toward those at libraries that hold American Research Libraries (ARL) memberships, library staff and faculty work closely to ensure that collections are adequate to support research in existing and new programs.

The staff of the Eugene McDermott Library continually assesses the collection by benchmarking themselves by discipline with other collections at peer institutions. The library purchases books through direct selection by a team of liaison librarians in consultation with faculty members, by systematic acquisition from an established approval program, and from a variety of electronic book providers by means of collaborative purchasing, subscription, and direct selection. In addition, the library employs electronic means to license journal subscriptions and datasets. A University-wide library Committee comprised of faculty, students, and library staff participates in collection development. The

committee is charged to review library procedures and policies, to assist and to promote faculty and student participation in the selection of library resources, and to evaluate holdings and make recommendations for their improvement. A library staff member is assigned to each discipline and serves as a liaison to that program. The liaison works directly with program faculty to acquire necessary books or journal subscriptions.

To support new degree programs, the library staff work directly with faculty on the library materials and supported needed for new degree programs. The librarians use a number of established means to determine the comprehensiveness of the Library's resources including books, journals, and other forms of information. The collection is evaluated against materials owned by other university libraries that have strong programs comparable to the one being proposed. Specifically, the librarians review the journals collection using the Journal Citation Reports from the Institute of Scientific Information (ISI) and review the entire collection using OCLC's World Collection Analysis software, which allows for a direct comparison of UT Dallas' collections to other selected libraries.

As part of their departmental assessment, the library uses LibQUAL, the library services survey instrument developed by the Association of Research Libraries in partnership with Texas A&M University to study the service needs and expectations of academic and research library users. The library staff uses this feedback to improve the collections while also identifying necessary facility and equipment upgrades.

UT Dallas is currently assessing its library status relative to the Association of Research Libraries and the desirability of taking the steps necessary to qualify for ARL membership. The University is fully committed to developing the library resources necessary to have a leading library consistent with a national research university. The University is also exploring unique ways to partner with the powerful library of UT Austin and other UT System components to provide students with access to any material they might require but in a very cost efficient manner. UT Dallas is committed to a highly efficient library that focuses on making the maximum amount of material available to students and faculty anytime and anywhere via electronic means and research tools. Further study is required to define the criteria for ARL membership and relationships of those requirements to available of resources from other UT System institutions such as UT Austin and UT Southwestern Medical Center - Dallas.

Graduate Student Support

In 2006, UT System formed a Task Force on Doctoral Education and the Post-doctoral Experience with representatives from all UT System institutions. Commissioner Raymund Paredes also met with the group to provide feedback on the Task Force's report. Among the recommendations offered was the imperative to increase monetary support of doctoral and postdoctoral students. To this end, in 2008, UT System established the Graduate Programs Initiative, a competitive grant program to support innovations in the education of non-professional graduate students.

One of the issues that faces all Texas public universities is the challenge of providing benefits such as health insurance to graduate research assistants. UT Dallas is in the process

of addressing this issue. It is also assessing its stipend rates for graduate students to ensure competiveness, benchmarking against UT Austin and Texas A&M, as well as other institutions such as those listed in Table 1. As external research funding increases, pressure for internally funded support should subside, allowing UT Dallas to increase graduate student support packages to a more competitive position. At present, the amount of graduate student stipends ranges widely in dollar amount and competiveness, with the best position being in the engineering school and the weakest position in high-demand science areas such as biology.

NATIONAL VISIBILITY

UT Dallas' strategic plan of 2007 had as one of its imperatives to "Tell our story better."

Since then, the University has engaged in a carefully crafted, budget-efficient communication campaign to focus attention on the excellence that has characterized UT Dallas from its beginning and to draw attention to efforts to build upon that excellence.

Such excellence is already evidenced by the scholarship and research of UT Dallas faculty members and students, and their appearances in the appropriate scholarly journals, academic conferences and professional meetings, as well as their fine performances in national and international competitions of an academic or scholarly nature. The challenge is to bring this established and growing excellence to wider notice, and in so doing, elevate not only the University, but also the reputation of the State of Texas in the research and higher education community.

UT Dallas embarked on meeting this imperative by creating *News Center*, a daily digital news service that offers information about research and accomplishments of students and faculty. In its first year, News Center published 577 stories, and the site registered 398,635 total views of the top 200 pages. Subscriptions in the two-year service's life have grown to more than 40,000—far beyond the campus population.

Many of the stories offered in the service are picked up nationally and through the focused efforts of staff, others are placed. As a result, UT Dallas' national news coverage increased 116% in one year, with 645 positive national news stories, including 14 appearances in *The Chronicle of Higher Education* on subjects as diverse as Texas' raids on other public universities' star faculty and UT Dallas undergrads besting of Bill Gates in their more-efficient solution of "the pancake problem," a longtime mathematical conundrum Gates worked on in his college years. This campaign is ongoing, and some of its results can be viewed online at www.utdallas.edu/news. In addition to this service, specific schools have created or participated in programs, competitions for funding or events to spread news of their achievements and expertise, including the following:

- The School of Management designed its own survey, the Top 100 Business School Research Rankings, which typically nets national and international placement in publications including *Business Week, Forbes*, and *The Wall Street Journal.*

- The Callier Center for Communication Disorders created the Callier Prize, a biennially awarded recognition of the greatest achievement worldwide in the in research or treatment of communication disorders.

The University has also created an "Experts Guide" to UT Dallas faculty that markets individual faculty to journalists and others who seek informed comment on an array of subject areas. This is available at http://www.utdallas.edu/experts/.

The University has given equal attention to building up its recruitment marketing efforts. Using only the resources already devoted to these efforts, the University strategically revised its communication stream to reach a geographically broader group of prospective students across the nation and the state, expanding recruitment efforts into markets hitherto untapped, and in doing so, expanding the number of individuals across the nation who are aware of the University.

PERIODIC REVIEW

The University of Texas at Dallas reviews progress toward strategic goals on an annual basis. Each year, the president reports progress to students, faculty, and staff on progress toward goals, as well as to the UT System as part of the annual review of the president. Key benchmark parameters are emphasized, along with progress toward meeting strategic goals.

The University will continue this process and every three to five years conduct a comprehensive assessment of its strategic plan. Progress will be assessed, goals re-evaluated, and priorities re-established. As in the past, it is anticipated that the entire campus community will be engaged in this process and participate in creating any revisions to the strategic plan. The Faculty Senate, Student Government, and Staff Council are particularly important in providing input to the planning process.

NATIONAL RESEARCH UNIVERSITY FUND (NRUF) CRITERIA

The passage in November 2009 of an amendment to the Texas Constitution created the National Research University Fund (NRUF). This endowment will ultimately provide additional funding for qualifying institutions that are currently emerging research universities, including UT Dallas.

The Coordinating Board is in the process of specifying criteria, which are generally described in House Bill 51, for eligibility to receive funds from NRUF. This section briefly summarizes the context of this strategic plan with regard to these parameters.

The criteria to determine eligibility for the NRUF involve these seven areas:

1. Restricted research expenditures must be at least $45 million per year for the previous biennium. In FY2012, UT Dallas had $45 million in restricted research expenditures. The seven-year goal for restricted research expenditures, which is

consistent with recent growth in research, is annual expenditures for restricted research of $70 million per year.

2. The value of the institution's endowment must be at least $400 million. The current endowment for UT Dallas is approximately $275 million, not including funds in the Permanent University Fund (PUF), from which significant allocations are directed annually to UT Dallas.

   The Dallas-Fort Worth region has supported UT Dallas. As UT Dallas alumni increase in numbers and over time achieve greater success, alumni giving should grow exponentially. In response to these opportunities, UT Dallas has greatly expanded its development staff over the past three years and has practices in place to raise even more funds in the future. The goal of $400 million in endowment, plus PUF funds, in ten years, is believed to be very realistic given the University's situation and commitment to fund raising.

3. The institution must award at least 200 doctor of philosophy degrees per year. This strategic plan presents a detailed plan for increasing the number of doctor of philosophy degrees. The strategy involves continued growth of the University and its doctorate programs to produce at least 240 doctorates per year in 10 years. The goal of at least 200 doctor of philosophy degrees per year awarded for the previous biennium should be reached within 10 years.

4. The entering freshman class must have demonstrated high academic achievement. UT Dallas already enjoys a high quality freshmen class and one that compares very favorably with the best public universities in Texas and many of the best in the nation. The University has grown and will continue to grow while maintaining a high priority on the quality and diversity of its freshman class.

5. The institution must be designated as a member of the Association of Research Libraries, have a Phi Beta Kappa chapter, or have received similar recognition of research capabilities. The University recognizes the need to continue to grow its library and move toward meeting the criteria consistent with major research university libraries. However, efficiency is important for all universities, and UT Dallas intends to leverage the considerable assets of its sister institutions, such as UT Austin and UT Southwestern Medical Center of Dallas, to ensure top-of-class access to library materials in a very cost efficient manner. The leverage of UT System libraries is a major asset for UT Dallas and other component institutions of the System. The UT Dallas library budget for the next ten years includes plans not only to expand library volumes and journals, but also to expand staff that can assist students and researchers. UT Dallas was recognized with a chapter of Phi Kappa Phi in April of 2011.

6. The faculty must be of high quality, as determined by Coordinating Board standards based on achievement and recognition of faculty members. As UT Dallas continues to expand and recruit new faculty members, its faculty is getting even stronger. UT Dallas is one of only a few universities in Texas that has on its faculty at least one

Nobel Laureate as well as elected members of the National Academy of Sciences and National Academy of Engineering. As indicated in Table 2, UT Dallas already ranks favorably with major national research universities in terms of doctorates awarded per year per faculty member. UT Dallas already has many endowed faculty positions, and is rapidly increasing the number of endowed chairs and professorships, which will assist with recruiting. With expansion, the faculty will continue to get even better and to receive even greater recognition for quality.

7. The institution must have demonstrated a commitment to high-quality graduate education, including number of graduate-level programs at the institution, the institution's admission standards for graduate education, and the level of institutional support for graduate students. The University of Texas at Dallas, which began as a graduate institution, has emphasized graduate education from its inception. No change in culture or direction is needed to sustain high-quality graduate education, although offering competitive compensation and benefits remains a challenge for UT Dallas and other Texas public research universities.

A university need not meet all seven of the NRUF criteria listed above. However, it is UT Dallas' goal to meet all seven and to do so as quickly as possible. The University believes that it already meets some of them, and this plan describes actions that will lead to meeting all seven criteria in less than ten years.

SUMMARY

The University of Texas at Dallas has been on a path since its inception to become a major national research university. The institution began as a graduate research institution and gradually expanded to include juniors and seniors, and in 1990 began admitting freshmen. The institutional profile is one of a high-quality undergraduate student body, faculty who are engaged in research and who are highly productive, and an institutional commitment over a long period of time to become a major research university.

To achieve its goals, the University needs to continue to grow, adding more students, faculty, staff, degree programs, buildings, endowment, etc. This growth will not require a change in direction. The quantitative goals set for the next ten years reflect a continuation of trends from the past ten years. The institution needs and plans to retain its focus and make investments strategically, consistent with this plan, to achieve the stated goals.

The business model for growth is sound. As more students are added, more resources will become available to hire faculty and to expand the institution. The University is not relying heavily on the State of Texas or the UT System PUF to fund its building program. The conservative assumption is made for financial forecasting that only one new building each from the State of Texas and from the PUF will be realized over the next ten years.

Growth will create an even better institution for students, providing new degree programs, courses, instructors, student activities, guest lectures, and a myriad of opportunities both intellectual and social.

Table 11 summarizes the key quantitative goals for the next ten years for UT Dallas.

Not quantifiable, but very important, are several other essential priorities. These include:

- Contributing to "*Closing the Gaps"* goals for Texas.
- Diversifying the student body and faculty to better mirror the demographics of Texas.
- Better engaging alumni in supporting UT Dallas and its students.
- Ensuring access to qualified Texas students, regardless of financial abilities.
- Forming strategic partnerships and alliances with other institutions in DFW (especially UT Southwestern Medical Center of Dallas and UT Arlington) as well as with schools, foundations, and other organizations.
- Adding value to our community through activities such as teacher preparation, commercialization of technologies, continuing education, K-12 outreach programs to students, the arts, and others.

Table 11. Summary of UT Dallas'10-Year Strategic Goals.

AREA	PARAMETER	FALL 2009	IN 7 YEARS
Students	Total Enrollment	19,700	25,000
	FTE Enrollment	15,800	20,000
	Freshman SAT (1600 max.)	1270	1270
	Top 10% Students (Freshmen)	51%	55%
	National Merit Scholars	63	75
	4-year Graduation Rate	51%	55%
	6-year Graduation Rate	64%	72%
Faculty	Tenured and Tenure-Track	493	600-700
	Faculty w/ Externally Funded Research	201	300
	Percent of Tenure, Tenure-Track Faculty w/ Externally Funded Research	41%	50%
Research	Total R&D	$ 91M	$130M
	Restricted R&D	$ 45M	$ 70M
	Federal R&D	$ 36M	$ 50M
Doctoral Programs	Number of Doctoral Programs	30	44
	Annual Graduates	179	240
Other	National Academy Members	4	10
	Annual Giving	$40M	$50M
	Endowment	$275M + PUF	$400M + PUF
	Academic and Research Space	1.8M sq ft	2.5 M sq ft

APPENDIX A. COORDINATING BOARD GUIDELINES FOR STRATEGIC PLAN

Guidelines for the Strategic Plan for Research

In accordance with Chapter 5, Subchapter G of Coordinating Board rules, a research university or an emerging research university as designated in the Board's accountability system must develop a long-term strategic plan for achieving recognition as a research university or enhance the institution's reputation as a research university.

NOTE: Wherever possible and applicable, state the goals for each of the following items and identify the objectives in measurable terms. Describe how and when the institution will assess progress towards the goals and objectives.

I. Vision Statement

The institution's plan should address, at a minimum, the following elements:

A. A description of the targeted status of the institution. What kind of university will the institution be if it achieves its goals and objectives?
B. Is the plan for the future a natural expansion of the institution's existing mission, or does it reflect a substantial change in direction?

II. Plan to Increase Research Funding and Productivity

The institution's plan to enhance research activities should address, at a minimum, the following elements:

A. *External funding.* Identify the institution's targets and how progress will be monitored. Include comparisons with national peers.
B. *Research priorities.* Define and describe the institution's targeted research priorities. Describe where and how the institution will focus its efforts.
C. *Allocation of resources.* Estimate the budget necessary to achieve the targeted goals and describe how the institution will utilize funds, staff resources, facilities, and other assets to maximize its efforts.
D. *Student participation.* Describe how the institution will enhance student opportunities to participate in research activities at the graduate and undergraduate levels.

III. Plan to Improve Undergraduate Education

The institution's plan should address, at a minimum, the following elements:

A. Describe the institution's plan to strengthen and improve the quality of undergraduate education, including the student profile.
B. Describe what the institution is doing to increase the number of baccalaureate degrees awarded, particularly in the critical fields identified in *Closing the Gaps by 2015.*

IV. Plan for Doctoral Programs

1. Existing Doctoral Programs

The institution's plan for existing doctoral programs should address, at a minimum, the following elements:

A. *Summary of existing programs*. Using past reviews, provide an evaluation of the institution's existing doctoral programs and how they fit into the institution's near-term and long-range plans. Include an assessment of strengths and weaknesses.
B. *Quality control.* Describe plans to close, consolidate, and/or improve existing doctoral programs with low graduation rates (based on Coordinating Board standards for low-productivity) or that do not meet other standards of excellence.
C. *Quality enhancement.* Describe plans to raise the level of existing doctoral programs from the level of strength to the level of national prominence.
D. *Comparisons with national peers.* For programs the institution plans to retain, identify nationally-ranked programs against which each of the institution's existing doctoral programs will be benchmarked.

2. New Doctoral Programs

The institution's plan for new doctoral programs should address, at a minimum, the following elements:

A. *Areas of emphasis.* Identify the areas the institution plans to focus on in the development of new doctoral programs. Emphasis should be placed on high-need areas, such as STEM, with sufficient documentation to support selection decisions. The plan should also demonstrate how the institution will build upon existing strengths.
B. *Assessment.* Provide a plan for the rigorous, periodic review of proposed programs using external evaluators.

C. *Regional Impact.* If applicable, describe the ways in which the development of doctoral programs and enhancement of research will enable the institution to better meet the needs of the region it serves and explain how the institution will monitor and assess its impact.

V. Plan for Faculty and Student Development

The institution's plan for faculty and student development should address, at a minimum, the following elements:

A. *Faculty research.* Describe plans to assist faculty in becoming more productive, more innovative, and more effective in their work.
B. *Faculty recognition.* Describe plans to assist faculty in achieving recognition as leaders in their field.
C. *Collaborations and Partnerships.* Describe plans to foster cooperative efforts amongst faculty at the institution and with faculty of other institutions.
D. *New faculty.* Describe plans to recruit additional faculty who can contribute to the institution's goal of maintaining or achieving national recognition.
E. *Student awards.* Describe initiatives to increase the number and prestige of undergraduate and graduate student competitive research awards.
F. *Student Diversity*. Describe plans to recruit and graduate doctoral students who can contribute to the State's goal of diversity in *Closing the Gaps*. Indicate the institution's contributions to the development of a future professoriate that reflects the population of Texas.

VI. Other Resources

The institution's plan should address, at a minimum, the following elements:

A. *Research facilities.* Describe significant projected additions to the institution's facilities related specifically to research, including timelines for completion.
B. *Library resources.* Describe plans to enhance the libraries, including facilities, equipment, digital resources, and collections. Describe specifically how the plans to enhance library resources are related to improving existing doctoral programs and supporting new doctoral programs.

C. *Graduate student support.* Describe plans to provide competitive financial support to graduate students including teaching assistantships, research assistantships, and fellowships for the targeted doctoral programs identified in the strategic plan.

VII. National Visibility

Identify any existing or projected programs and resources, not already identified above, to increase the national visibility and research reputation of your institution.

Appendix B. Benchmark (Peer) Doctoral Programs.

Doctoral Program	Benchmark Institutions
Humanities	Univ of California - Irvine; Culture and Theory Univ of California – Santa Cruz; History of Consciousness Carnegie Mellon University; Literary and Cultural Studies
Humanities Aesthetics	Univ of California - Irvine; Culture and Theory Univ of California – Santa Cruz; History of Consciousness Carnegie Mellon University; Literary and Cultural Studies
Humanities Literary Studies	Univ of California - Irvine; Culture and Theory Univ of California – Santa Cruz; History of Consciousness Carnegie Mellon University; Literary and Cultural Studies
Humanities History of Ideas	Univ of California - Irvine; Culture and Theory Univ of California – Santa Cruz; History of Consciousness Carnegie Mellon University; Literary and Cultural Studies
Audiology	University of Iowa Univ of Florida Univ of Texas at Austin
Cognition & Neuroscience	University of California at Irvine University of Massachusetts University of North Carolina
Communication Sciences and Disorders	University of Florida Arizona State Univ Univ of Pittsburgh
Psychological Sciences	University of Oregon Univ of California at Santa Cruz University of California at Santa Barbara
Criminology	Univ of South Florida Arizona State Univ of South Carolina
Economics	Univ of Missouri - Columbia Univ of Wisconsin - Milwaukee Florida State
Geospatial Information Science	No comparable established programs Traditional Geography Programs with some GIS: Ohio State Penn State Univ of California - Santa Barbara

Political Science	Stony Brook Univ Univ of California - Davis Univ of Georgia
Public Policy	George Mason Georgia Tech Univ of Maryland - College Park
Public Affairs	Univ of Georgia Univ of Texas LBJ School Univ of Indiana
Biomedical Engineering	Duke Univ Johns Hopkins UC San Diego
Computer Engineering	Univ of Illinois UC Virginia Tech Arizona State Univ
Computer Science	Penn State Ohio State Arizona State
Electrical Engineering	Georgia Tech Univ of Maryland North Carolina State
Microelectronics	Georgia Tech Univ of Maryland North Carolina State
Materials Science & Engineering	Univ Illinois UC Stanford Rutgers
Software Engineering	Carnegie Mellon UT Austin
Telecommunications Engineering	Arizona Michigan State Oklahoma State
Management Science	Univ of Iowa Georgia Tech Univ Purdue Univ
International Management Studies	Univ of Iowa Georgia Tech Univ Purdue Univ
Molecular & Cell Biology	Arizona State Univ Colorado State Univ Univ of California - San Diego
Chemistry	Univ of Delaware Clemson Univ of Nebraska, Lincoln

Geosciences	Univ of Oregon (Eugene) Univ of North Carolina Chapel Hill Univ of Nevada Reno Univ at Buffalo
Applied Mathematics	Univ of Mass.- Amherst Georgia Institute of Technology Rutgers Univ Boston Univ
Statistics	Indiana Univ Texas A&M Univ Washington Univ in St Louis
Physics	Virginia Tech Northeastern Univ of New Mexico

Appendix C. Faculty Recognition: Endowed Professorships and Chairs

Title of Endowment	Appointee
Administrative	
Eugene McDermott Distinguished University Chair Of Leadership	Daniel, David
Cecil H. Green Distinguished Chair Of Academic Leadership	Wildenthal, Hobson
School of Arts and Humanities	
Margaret M. McDermott Distinguished Chair Of Art And Aesthetic Studies	Brettell, Richard
Arts And Humanities Distinguished Chair	Linehan, Thomas
Arts And Humanities Chair	Prieto, Rene
Chair Of Art And Aesthetic Studies	Rodriguez, Robert
Hillel A. Feinberg Chair Of Holocaust Studies	Patterson, David
Leah And Paul Lewis Chair Of Holocaust Studies	Ozsvath, Zsuzsanna
Anne Stark Watson And Chester Watson History Professorship Endowment	Edmunds, W. David
Ignacy And Celina Rockover Professorship	Kratz, Dennis
Katherine R. Cecil Professorship In Foreign Languages	Schulte, Rainer
Founders Professor	Turner, Frederick
Ashbel Smith Professor	Nadin, Mihai
Russell Cleveland Professor in Guitar Studies	Madriguera, Enric
Arts and Technology Distinguished Chair	Malina, Roger F.
Ashbel Smith Professor	Rabe, Stephen
Stan and Barbara Rabin Professor in Holocaust Studies	Roemer, Nils
School of Behavioral and Brain Sciences	
T. Boone Pickens Distinguished University Chair In Clinical Brain Science	Open
Distinguished University Chair in Behavioral and Brain Science	Park, Denise
Dee Wyly Distinguished University Chair For BrainHealth	Chapman, Sandra
Jane And Bud Smith Distinguished Chair, Dist. Chair in Neuroscience	Hart, John
Nelle C. Johnston Chair In Communication Disorders In Children	Tobey, Emily
Emilie And Phil Schepps Distinguished Professorship Of Hearing Science	Open
Aage And Margareta Moller Professor	O'Toole, Alice
Aage And Margareta Moller Distinguished Professor for Leadership	Moore, Bert
Howard B. And Lois C. Wolf Endowed Professorship For Pediatric Hearing	Roeser, Ross
Sara T. Martineau Endowed Professorship At The Callier Center For Communication Disorders UT Dallas	Campbell, Thomas

Margaret F. Jonsson Professor	Moller, Aage
Ashbel Smith Professor	Jerger, Susan
Ashbel Smith Professor	Underwood, Marion
Distinguished Chair in Behavioral and Brain Sciences	Rugg, Michael
Robinson Family Professor	Owen, Margaret
Jonsson School of Engineering and Computer Science	
Texas Instruments Distinguished University Chair In Nanoelectronics	Chabal, Yves
Texas Instruments Distinguished Chair	O, Kenneth
Distinguished Chair In Microelectronics	Gnade, Bruce
Distinguished Chair In Telecommunications	Hansen, John
Louis Beecherl, Jr., Endowed Distinguished Chair In Engineering	Lu, Hongbing
Excellence In Education Chair In The Erik Jonsson School Of Engineering And Computer Science #1	Spong, Mark
Excellence In Education Chair In The Erik Jonsson School Of Engineering And Computer Science #2	Bastani, Farokh
Lars Magnus Ericsson Chair In Electrical Engineering	Spong, Mark
Cecil H. And Ida Green Professor In Systems Biology Science #2	Prasad, Shalini
Founders Professor	Sudborough, Ivan
Ashbel Smith Professor	Chandrasekaran, R.
Erik Jonsson Distinguished Professor	Al-Dhahir, Naofal
Erik Jonsson Distinguished Professor	Chiu, Yun
Texas Instruments Distinguished Chair in Nanoelectronics	Fischetti, Massimo
Erik Jonsson Chair	Gupta, Gopal
Research Initiation Chair	Harabagiu, Sanda
Texas Instruments Distinguished Chair in Nanoelectronics	Hsu, Julia
Erik Jonsson Distinguished Chair	Ma, Dongsheng
Erik Jonsson Distinguished Professor	Nosratinia, Aria
Distinguished Chair of Engineering	Rajashekara, Kaushik
Erik Jonsson Chair	Rotea, Mario
Louis A. Beecherl Jr. Distinguished Professor	Thuraisingham, Bhavani
Erik Jonsson Distinguished Chair	Wallace, Robert
Cecil H. And Ida Green Professor In Systems Biology Science	Vidyasagar, Mathukumalli
Louis A. Beecherl Jr. Distinguished Chair	Yurkovich, Stephen
School of Economics, Political and Policy Sciences	
Lloyd V. Berkner Professor	Berry, Brian
John Kain Professorship Of Economics	Open
Vibhooti Shukla Professor Of Economics And Political Economy	Sandler, Todd
Ashbel Smith Professor	Clarke, Harold

Ashbel Smith Professor	Piquero, Alex
Ashbel Smith Professor	Griffith, Daniel
Mary McDermott Cook Distinguished Chair for Undergraduate Education and Research	Pineres, Sheila
School of Management	
Andrew R. Cecil Chair In Applied Ethics	Dess, Gregory
Caruth Chair	Pirkul, Hasan
Eugene McDermott Chair	Sethi, Suresh
Dallas World Salute Distinguished Professorship In Global Strategy	Tsang, Eric
Charles And Nancy Davidson Distinguished Chair In Accounting	Ali, Ashiq
Charles And Nancy Davidson Distinguished Chair In Information Systems	Mookerjee, Vijay
Charles And Nancy Davidson Distinguished Professorship In Operations Management	Sarkar, Sumit
Charles And Nancy Davidson Distinguished Chair In Marketing	Ratchford, Brian
Founders Professor	Rao, Ram
Ashbel Smith Professor	Cready, William
Lars Magnus Ericsson Distinguished Professor	Jacob, Varghese
Ashbel Smith Professor	Liebowitz, Stanley
Ashbel Smith Professor	Rebello, Michael
Ashbel Smith Professor	Stecke, Katherine
Ashbel Smith Professor	Bensoussan, Alain
O.P. Jindal Chair	Bolton, Gary
Ashbel Smith Professor	Dawande, Milind
Ashbel Smith Professor	Katok, Elana
O.P. Jindal Chair of Management	Peng, Mike
Ashbel Smith Professor	Radhakrishnan, Suresh
School of Natural Sciences and Mathematics	
C. L. And Amelia A. Lundell Professorship Of Life Sciences	Open
The Robert A. Welch Distinguished Chair In Chemistry #2	Smith, Dennis
The Robert A. Welch Distinguished Chair In Chemistry #1	Baughman, Ray
James Von Ehr Distinguished Chair In Science And Technology	Open
Cecil H. And Ida Green Distinguished Chair In Systems Biology Science #1	Sherry, A. Dean
Cecil H. And Ida Green Distinguished Chair In Systems Biology Science #2	Zhang, Michael
Cecil H. And Ida Green Distinguished Chair In Systems Biology Science #3	Zhang, Li
Distinguished Chair in Natural Sciences and Mathematics	Heelis, Roderick
Cecil H. And Ida Green Professor In Systems Biology Science #4	Open

Regental Professor	Hulse, Russell
Distinguished Chair in Sciences and Mathematics	Novak, Bruce
Ida M. Green Professor	McMechan, George