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UTEP’s long-standing commitment over the last two decades has been to reject the traditional choice between access and excellence that characterized U.S. higher education in the twentieth century and to insist upon the joint attainment and continuing enhancement of both access and excellence.

That means, in its simplest form, that we must be a research university in order to fully serve the people of our region now and in the future. We must reflect our 21st century demographic, and we must bring to our region the pinnacle of excellence in public higher education – that is, the full capacity, breadth, innovation, and regional impact of a national research university.

UTEP’s quest remains what it has been: to become the first national research university in the United States that serves a 21st century demographic. Our 21st century demographic is the predominantly Mexican-American population of West Texas along with the Hispanic populations of Texas as a whole and the United States. UTEP President Diana Natalicio recently characterized our challenge as follows:

“In Texas—and indeed across the U.S.—higher education is locked in a traditional model better suited to the mid-20th century America than today. Demographics have shifted dramatically, driven largely by the rapid growth of the Hispanic population, and it’s time to recognize that low-income and minority students have every right to expect the same level of educational excellence experienced by their peers in more affluent settings. Texas’ future prosperity resides in these undereducated segments of our
population. We literally cannot succeed without setting high expectations for them and fully developing their talents.

UTEP’s responsibility to its students and to the State of Texas is to demonstrate that a commitment to both access and excellence—to both “Closing the Gaps” and “Tier One” goals—can and must be achieved. We have been highly successful over the past 20 years in building research and doctoral program capacity while maintaining our strong access commitment to first-generation, low-income and mostly Hispanic students, who also happen to be highly talented. We intend to continue to build on that success to achieve our Tier One goal, for and with the UTEP students we serve, not in spite of them. They—and Texas—should expect nothing less.”

-- The Texas Tribune, January 19, 2010

UTEP can bring to Texas the first national research university to fully serve its 21st century demographic. What does that mean? Why are there so few candidates for this goal? The answers lie in the fact that it takes a long period of sustained commitment to build a university that can keep up with the changes in the characteristics of the populations it serves: in its region, in its state, and nationally. It takes an equally long time to lay the foundations to build a research university; adding doctoral programs, recruiting and supporting graduate students of exceptional talent, including those from its own undergraduate body, and recruiting and supporting faculty whose research, scholarship and creative activity are of national caliber and distinction. Few institutions have embarked upon those long journeys at the same time; fewer still have stayed the course.

Over the last five years, UTEP has produced steady increases in undergraduate enrollment (up 13% from fall 2003 through fall 2009) and spectacular increases in undergraduate degrees awarded (up 71% over the same time period). Even more important for State and national policy priorities, UTEP increased the enrollment of Hispanic students by even more than its total population (Hispanics up 19% from fall 2003 through fall 2009 compared to 13% overall), and most important of all, its increase in degrees awarded to Hispanics (up 80% compared to 71% overall).
Access to enrollment has been matched by excellence in teaching and learning, as shown by the degrees awarded. Excellence is also a function of the research, scholarship and creative activity produced by the faculty and students of the University. UTEP’s research performance has been no less impressive. Research on the UTEP campus has increased steadily over the past 20 years, with growth in annual research expenditures from under $5 million in FY 1989 to almost $60 million in FY 2009.

This growth in research performance has been fueled by extraordinary investments by the State of Texas and the University of Texas System -- in the last five years more than $250 million in UTEP’s infrastructure, primarily facilities to support the University’s Science, Technology, Engineering, and Mathematics research and educational programs. Included in this investment are the recently opened Bioscience Research Building and new buildings being constructed for the Departments of Chemistry and Computer Sciences and for the College of Health Sciences and the School of Nursing.

UTEP’s progress during the past 20 years has clearly demonstrated its capacity to become a national research university. UTEP’s federal research expenditures rank second only to UT Austin among UT System universities and second only to the University of Houston among the other emerging Tier One institutions. UTEP also excels in private giving, ranking first by a wide margin among the emerging Texas Tier One universities in the UT System. UTEP will celebrate its Centennial in 2014, and will incorporate the quest to become a national research university into both the commemoration of this major institutional milestone and the fundraising associated with it. The University has already initiated the quiet phase of this Centennial capital campaign whose goal is expected to be $200 million and whose focus will be on securing funding for endowed faculty chairs and professorships, endowed graduate fellowships, undergraduate merit scholarships, and other investments to continue building the University’s excellence.
UTEP’s strategic planning for research is based on four groups of objectives that deal with performance, growth, quality assurance, and efficiency gains. For each objective, quantitative outcomes have been determined and developed for the next decade.

**Performance:** First, UTEP’s strategic planning for research identified the following two as key performance objectives:

- annual expenditure of at least $100 million in externally funded research, according to commonly accepted national standards; and
- annual graduation of approximately 200 doctoral degrees.

**Growth:** Second, in order to achieve those outcomes, UTEP will have to grow in a number of critical dimensions, four of which have been identified as growth objectives. UTEP will increase its number of research-active faculty who are nationally competitive in acquisition of external funding and who will serve as the core faculty mentors and dissertation directors for doctoral students. UTEP is an emerging research university, and many of our doctoral programs are still within their first decade of operation. The University has yet to build out its full complement of PhD programs, and we have developed plans to grow current core faculty in strategically identified new areas of potential national distinction. New faculty and new doctoral programs will require significant increases in resources, including continuing growth at all programmatic levels as UTEP strives to meet the educational needs of a large and historically under-served population. More students, more research, and more academic programs will all demand facilities, both new and renovated. These considerations will drive the following four supporting growth objectives:

- increase the number of tenured and tenure-track faculty from 508 to 720 by 2020;
- increase the number of PhD programs to 40 by 2020;
- increase student enrollment from 21,000 to 29,500 by 2020; and
- increase the provision of research, instructional, and associated support space by 3.2 M gross square feet (GSF) by 2020.

**Quality Assurance:** Third, UTEP’s strategic plan monitors the quality of the educational experience for UTEP students by tracking two critical quality assurance objectives that indicate the access of students to faculty teachers and mentors:
• maintain the overall University student/faculty ratio at approximately 21:1 and
• maintain the number of doctoral students per tenured/tenure-track faculty member at less than 3:1.

These ratios have been set within the range of values at our aspirational peer institutions and those at leading national research universities in Texas.

**Efficiency:** Fourth, our analyses show that our past growth has been accomplished in part by efficiency gains over the last 5-10 years. Our models for increased performance in funded research and in graduation of doctoral students both build in continued incremental efficiency gains in the following measures and associated efficiency objectives:

• increased annual dollar volume of sponsored research per tenured/tenure-track faculty member at a rate higher than the rate of inflation; and
• reduction in time to doctoral degree after completion of coursework.

If UTEP maintains its best practices in growth of enrollment, faculty, program development and research productivity, if there are modest incremental efficiency gains, and if the Centennial Campaign successfully achieves its funding goal in 2014, the outcomes derived from the models project that UTEP will be able to achieve its primary performance benchmarks of $100 million in externally funded research and 200 PhD graduates per year within 7-8 years, or approximately by 2017-18. With increased System, state, federal and/or private investment, the models project that UTEP will be able to achieve more aggressive and strategic research and doctoral program growth that will permit earlier attainment of the Tier One benchmarks.

While a national research university necessarily exemplifies academic, scholarly, and artistic excellence in all areas of its endeavors, a key part of the strategic plan for research identifies a limited number of priorities in which the University’s pursuit of externally sponsored research will be focused. By their very nature opportunistic and flexible, the following research priorities are ones in which UTEP already has achieved national distinction and which also seem particularly promising for future growth:

• **Health & Biomedical Sciences and Engineering** - Addressing key border health issues and Hispanic health disparities by understanding complex living systems and defining new biomedical technologies and therapies.
• **Energy & Environment** – Studying the impact of environmental change and the shrinking supplies of water, energy, and other resources regionally in the Chihuahuan Desert and globally, to provide solutions that sustain and improve the quality of life.

• **Education for the 21st Century Demographic** – Conducting rigorous educational research to improve teaching, prepare students from diverse populations to become innovative and productive members of a global society, and develop policy.

• **National Defense and Border Security** - Meeting the needs of agencies responsible for the protection, safety and fostering of future economic integration opportunities along the U.S.-Mexico border.

• **Global Enterprise & Border Studies** – Researching the causes and consequences of globalization to inform academia, practitioners, and policy groups and to advance understanding of globalization on the border, in the Western Hemisphere, and in the world.

In addition, research at UTEP is strengthened by a number of cross-cutting themes that link and synergize work across and between the priority areas:

• **Cyberinfrastructure and Collaborative Environments** - Creating innovative Cyberinfrastructure to cultivate education and research collaborations within and across disciplines.

• **Emerging Technologies: Information Technology, Biotechnology & Nanotechnology** – Developing innovative methods and technologies to advance research in areas of regional, state, and national need.

• **U.S. – Mexico and Latin America: Social and Behavioral Issues** – Leading the nation in studies that require multidisciplinary expertise on Mexico and Latin America, multi-cultural communities, and language and cultural issues in border environments.
All research universities have points of distinction and areas of emphasis upon which they plan to build. All will hire superb faculty and develop programs that will bring them national and international recognition. So will UTEP. But what makes UTEP unique in this endeavor is the essential role played by our student demographic, for our region, for Texas, and for the U.S.

UTEP’s commitment to becoming the first national research university serving a 21st century demographic started with the fundamental principle that talent is everywhere and that all talent should have an equitable opportunity to be realized, to be taken as far as it can go. The gene pool of the million people in El Paso is as rich in brilliance, creativity, diligence, and tenacity as the gene pool of any other million Texans. Its people are not, however, blessed with equal financial resources or job opportunities. It is the responsibility of education to tackle that.

When the El Paso Collaborative for Academic Excellence was launched twenty years ago, it recognized the essential continuity and coherence of the K-16, and later PreK-16, continuum. At the time UTEP was limited to a single doctoral program, in geological sciences. Aspiration and ambition for west Texas did not extend into doctoral education and research.

The question then might be shaped as follows: if UTEP had not had the support of the LULAC/MALDEF lawsuit and had remained restricted to that single doctoral program, would Texas be better off today? It is our responsibility to ensure that the shortsightedness that prevailed until 1990 not be replicated in 2010 – and that’s a real danger if the same assumptions that have historically excluded Hispanics and squandered the talent assets they represent for the rest of the State are allowed to persist.

UTEP has already demonstrated its capacity to become an emerging Texas Tier One university and is well positioned now to become a national research university by achieving and enhancing excellence (through its growth in graduates, in doctoral programs, and in research, scholarship and creative work) while at the same time expanding access. UTEP did not do it by changing the student populations it served – by changing the inputs, the raw material – because that was never the problem. The problem that UTEP recognized and tackled head-on was the under-estimation of that “raw material” and the misunderstanding of its promise. That’s why this Tier One opportunity and this Strategic Plan for Research are not a new vision for us – they are simply a continuation of the journey, an extension of educational opportunity to the highest level we can go.
On the basis of the last twenty years, UTEP has the confidence that it will complete that journey with and for these students, not in spite of them.

For Texas, what does this mean? Closing the Gaps has shown that achieving equity in access and excellence is a long, hard process. It took UTEP twenty years to close its gap with its community. What happens to UTEP in the next decade will play a very large part in the national visibility of the Tier One and national research university effort in Texas. If UTEP is not sustained and advanced, if our performance fails, then the Tier One project in Texas will be sadly labeled, “Not for Hispanics.” But if UTEP emerges successfully as a recognized national research university, as we are confident that we will, then Texas will have achieved something no other state has done or even has on its agenda – it will have developed the first national research university serving a 21st century demographic.
Section I: Vision

The First National Research University Serving a 21st Century Demographic

The vision of The University of Texas at El Paso is to be the model research university for the 21st century demographic. Our goal is to demonstrate research and teaching excellence as well as to provide access and educational opportunity to the people of the El Paso region and beyond.

UTEP’s long-standing commitment over the last two decades has been to reject the traditional choice between access and excellence that has characterized U.S. higher education in the twentieth century and to insist upon the joint attainment and continuing enhancement of both access and excellence. That means, in its simplest form, that we must be a research university in order to fully serve the people of our region now and in the future. We must reflect our 21st century demographic and we must bring to our region the pinnacle of excellence in public higher education – that is, the full capacity, breadth, innovation, and regional impact of a national research university.

UTEP’s quest remains what it has been: to become the first national research university in the United States that serves a 21st century demographic. Our 21st century demographic is the predominantly Mexican-American population of West Texas along with the Hispanic populations of Texas as a whole and the United States. The Tier One legislation of 2009 gives us a set of performance benchmarks along the way, such as the attainment of $100 million a year in sponsored research expenditures and the annual graduation of 200 PhDs. But our goal is unchanged.

UTEP has been pursuing this commitment to access and excellence since long before the Washington Advisory
Group in 2004 brought us “Tier One” and long before the 2009 Texas State Legislature passed its landmark legislation creating a path to Tier One for the seven emerging research universities in the State. UTEP’s current institutional Strategic Plan 2008-2015 states that:

“With its commitment to both access and excellence, UTEP has been recognized as an international model for success in fulfilling the mission of a public research university with a 21st century demographic.”

--The University of Texas at El Paso
Strategic Plan 2008-2015, p. 15
http://www.utep.edu/aboutUTEP/strategic_plan.pdf

In order to achieve our goal as a national research university, we have been striving for the last several years:

- to maximize the rate of growth of faculty research, as measured by sponsored research expenditures;
- to maximize the rate of growth of the number of PhD’s graduated each year; and
- to maximize the rate of growth of the number of baccalaureate degrees awarded each year; while
- maintaining our diversity of students, faculty and staff – the people we serve and the people we are.

UTEP’s overarching institutional goal and these related objectives have been translated into this Strategic Plan for Research.

UTEP President Diana Natalicio recently addressed the essential synthesis between student access and success in Texas and the need for a national research university serving the 21st century demographic:

In Texas, this same 21st century workforce competitiveness theme has been promoted through an initiative called “Closing the Gaps.” Ten years ago, the Texas Higher Education Coordinating Board (THECB) set targets for increasing the number of Texans who participate and graduate from the state’s universities. The THECB also recognized that achieving these goals in the context of the state’s rapidly changing demographics would require specific efforts
to increase the participation and success of Hispanics and African Americans who continue to be underrepresented on Texas university campuses, and specific targets were set for them.

One curious aspect of the “Closing the Gaps” conversation is how little it has been associated with another and more recent Texas initiative to promote the development of additional national research (“Tier One”) universities in the state. Although both these higher education initiatives claim to be designed to help Texas become a more competitive player in the 21st century global economy, there appears to be little or no connection between the two. In fact, a commitment to educating large numbers of low-income and minority students is viewed as incompatible with the quest for excellence expected of a “Tier One” university. In other words, there is a widespread assumption that all universities must make a choice between access and excellence in defining their institutional missions and planning their future development …

In Texas—and indeed across the U.S.—higher education is locked in a traditional model better suited to the mid-20th century America than today. Demographics have shifted dramatically, driven largely by the rapid growth of the Hispanic population, and it’s time to recognize that low-income and minority students have every right to expect the same level of educational excellence experienced by their peers in more affluent settings. Texas’s future prosperity resides in these undereducated segments of our population. We literally cannot succeed without setting high expectations for them and fully developing their talents.

UTEP’s responsibility to its students and to the State of Texas is to demonstrate that a commitment to both access and excellence—to both “Closing the Gaps” and “Tier One” goals—can and must be achieved. We have been highly successful over the past 20 years in building research and doctoral program capacity while maintaining our strong access commitment to first-generation, low-income and mostly Hispanic students, who also happen to be highly talented. We intend to continue to build on that success to achieve our Tier One goal, for and with the UTEP students we serve, not in spite of them. They—and Texas—should expect nothing less.”

*The Texas Tribune, January 19, 2010*
Serving the 21st Century Demographic

UTEP can bring to Texas the first national research university to fully serve its 21st century demographic. What does that mean? Why are there so few candidates for this goal?

The answers lie in the fact that it takes a long period of sustained commitment to build a university that can keep up with the changes in the characteristics of the populations it serves: in its region, in its state, and nationally. It takes an equally long time to lay the foundations to build a research university: adding doctoral programs, recruiting and supporting graduate students of exceptional talent, including those from its own undergraduate body, and recruiting and supporting faculty whose research, scholarship, and creative activity are of national caliber and distinction. Few institutions have embarked upon those long journeys at the same time; fewer still have stayed the course.

Consider the following trajectories in the service of Hispanic students for the 7 emerging research universities in Texas over the last 7 years, 2003-09. Related graphs can be found in Appendix A.

1. **Total Hispanic Enrollment** (see Figure I-1)
   - UTEP has increased from 13,164 to 15,973.
   - No other institution has reached 13,000.
   - 5 of the 7 are less than 8,000.

2. **Hispanic Enrollment as a Percentage of Total Enrollment** (see Figure I-2)
   - UTEP’s Hispanic undergraduate enrollment is nearly 80% of its total and rising; UTSA is 44%, and the other 5 are at less than 25%.
   - UTEP’s Hispanic Master’s enrollment is 63% of its total and rising; UTSA is at 38%, and the other 5 are less than 10%.
   - UTEP’s Hispanic Doctoral enrollment is 41% of its total and rising; only UTSA is above 20%, and the other 5 are less than 10%.
3. **Total Number of Degrees Awarded to Hispanics (see Appendix A, Figure 1)**
   - UTEP has almost doubled in 7 years, from 1,461 to 2,776 degrees awarded per year.
   - UTSA is the only other institution that awards over 2,000 degrees per year.
   - 4 of the 7 graduate fewer than 900 per year.

4. **Degrees Awarded to Hispanics as a Percentage of the Total Number of Degrees Awarded (see Appendix A, Figure 2)**
   - UTEP’s percentage of bachelor’s degrees awarded to Hispanics is at 77% and rising; UTSA is at 45%, and none of the rest exceeds 22%.
   - UTEP’s percentage of Master’s degrees awarded to Hispanics is at 57%; UTSA is 33%, and none of the rest exceeds 10%.
Figure I-1: Total Hispanic Enrollment 2002-09
Figure I-2: Hispanic Enrollment as a Percent of Total
Description of the Targeted Status

What kind of university will UTEP be when it achieves its goals and objectives?

First, UTEP will be a national research university: active, nationally recognized research will be conducted across the campus; funding support will come from a variety of federal, state, and private sources; there will be new and strengthened doctoral programs in strategic areas that attract excellent students from across the country and world, as well as provide opportunities for the region’s residents. The University will also attract and retain a nationally and internationally recognized faculty, a faculty that will share the University’s commitment to quality education, for both graduate and undergraduate students, as well as to research.

But this national research university will serve a student population unlike other current national research universities in the U.S., a population that will be representative of the rapidly changing U.S. demographics of the 21st century. Given UTEP’s location on the U.S.-Mexico border, Hispanics will comprise the majority of the students. Most of UTEP’s undergraduates will be from the region, although students will also be recruited from Texas, New Mexico, Arizona, California, and Mexico. Graduate students will be actively recruited from across the nation and internationally, with an emphasis on attracting exceptional students interested in both specific programs and the opportunity to study in UTEP’s binational setting.

Another unique hallmark of this national research university will be its success in providing access to higher education to students of one of the poorest metropolitan regions in the nation. We will ensure access and opportunity for the students in the region by removing unnecessary barriers to the institution (such as the use of irrelevant predictors of student success for non-traditional students), and by working with partners in the region to increase the college readiness of all students, from K-12 to adult re-entry students. To ensure academic success for all students, including the large number of those who are the first in their families to pursue higher education, UTEP will continue to provide support services that have achieved national and international recognition for their effectiveness. Our nationally and internationally recognized faculty, committed to UTEP’s vision, will provide hands-on research opportunities and student-centered educational experiences that will prepare their students for 21st century careers and graduate education.
This vision does not represent a new direction for UTEP, but rather the culmination of what the University has been striving to achieve over the past 20 years. Starting in the early 1990’s, UTEP began working with school district and community college partners through the El Paso Collaborative for Academic Excellence to transform and vertically integrate education for the region’s young people. National Science Foundation (NSF)-funded programs ranging from the Urban Systemic Initiative to the Math-Science Partnership have increased mathematics and science test scores throughout El Paso and encouraged students to continue to college or university with a firm foundation in mathematics and science.
Figure I-3 shows that the El Paso metropolitan area at the top in overall high school graduation rates in 2008-2009 for the whole region (75%), compared to Austin, Dallas, Houston, and San Antonio (59-74%) —and significantly above the other higher income metropolitan areas in the high school graduation rates of Hispanic students (73% compared to 59-64%).

**Figure I-3: Graduation Rates for Major Texas Cities and El Paso Region, 2008-2009**
Hispanics became a majority of the UTEP student population in 1986, and the University’s demographics now mirror those of the region it primarily serves: 76.1% Hispanic, 10.4% White, 3.0% African-American, and 10.5% other, including Mexican nationals and international students (Figure I-4).

**Figure I-4: UTEP Enrollment: Student Race/Ethnicity Trends, 1978-2009**
Figure I-5: Degrees Awarded to Under-represented Minorities as a Percent of Total Degrees Awarded

Figure I-5 shows that underrepresented minorities comprise an increasingly large percentage of UTEP’s baccalaureate, master’s, and doctoral degree recipients, compared to students from other groups. Therefore, it is clear that the success of Hispanic students in completing degrees at UTEP closely tracks their representation in UTEP’s total enrollment.

In recent years there has been an increased awareness across the State of Texas and in the El Paso region that increasing the number of baccalaureate graduates is critical to participation in the 21st century global economy. At UTEP considerable attention has been paid to developing strategies to help students successfully complete their degrees, recognizing that the greatest efficiency gains we can
achieve in the return on the State’s investment are to graduate more of our students, wherever and whenever they started their post-secondary education and whether they started as full-time or part-time students. Total degrees awarded is a more meaningful measure of a 21st century university’s success than the traditional six-year cohort graduation rate, because it counts the success of all graduates rather than merely those graduates who began their degrees as first-time full-time freshmen in a fall semester. Under the flawed graduation rate metric, as it has been traditionally defined for the past 20 years, more than 70% of the graduates who cross the stage at UTEP’s Commencement are not counted – not at UTEP, nor anywhere else. There are numerous efforts underway nationally to develop new metrics to measure individual student and institutional degree productivity, and the State of Texas now calculates its student success incentive awards on the basis of growth in the number of graduates rather than on graduation rates. Consistent with “Closing the Gaps” goals, the State also provides additional weight to “high risk” graduates and those who earn degrees in high-priority fields such as science, engineering, nursing, and teaching.
Over the last five years, UTEP has produced steady increases in undergraduate enrollment (up 13% from fall 2003 through fall 2009) and spectacular increases in undergraduate degrees awarded (up 71% over the same time period). Even more important for State and National policy priorities, UTEP increased the enrollment of Hispanic students by even more than its total population (Hispanics up 19% from fall 2003 through fall 2009 compared to 13% overall), and most important of all, its increase in baccalaureate degrees awarded to Hispanics (up 80% compared to 71% overall – see Figure I-6).

Figure I-6: Undergraduate Enrollment and Degrees Awarded, Total & Hispanic Students

UTEP has affirmed the principle that there must be no choice between access and excellence if a public university is truly to serve its regional population. Access to enrollment has been matched by excellence in teaching and learning, as shown by the degrees awarded. Excellence is also a function of the research, scholarship, and creative activity produced by the faculty and students of the University. UTEP’s research performance has been no less impressive. Research on the UTEP campus has increased steadily over the past 20 years, with growth in annual research expenditures from under $5 million in FY 1989 to nearly $60 million in
FY 2009. With its student demographics, UTEP has been eligible for minority-institution research capacity-building funding from federal agencies which has been instrumental in increasing our success in securing highly competitive mainstream grant funding. Thus, for example, the NIH Research Centers in Minority Institutions (RCMI) program helped establish the Border Biomedical Research Center (BBRC) whose state-of-the-art core facilities were leveraged to recruit and retain faculty who, in turn, have successfully competed for R01 grants from the NIH. Today, UTEP is becoming a leader in building Cyberinfrastructure to support interdisciplinary collaborations in research and education through National Science Foundation Centers for Research Excellence in Science and Technology (CREST) funding for the University’s CyberShARE Center. As a national research university, UTEP will continue pursuing opportunities like RCMI and CREST because these programs enhance the research infrastructure required to achieve national competitiveness.

When UTEP was designated by the Texas Higher Education Coordinating Board as a “single-doctoral granting institution” and had few graduate students, faculty learned to actively engage undergraduates in their research projects. These faculty members came to recognize that undergraduates were valued members of their research teams, and that their participation increased opportunities for faculty to prepare them for graduate school and professions. Over time, UTEP has successfully engaged undergraduates in research with programs such as the NSF Model Institutions for Excellence, NIH’s Minority Biomedical Research Support (MBRS) program, NSF’s Louis Stokes Alliances for Minority Participation Program, and NSF’s Research Experiences for Undergraduates. With the Affinity Research Group (ARG) model, UTEP has become a national leader in designing research groups that prepare nontraditional students for success in graduate school and the workforce. Several former UTEP undergraduate researchers -- such as Dr. Benjamin Flores, a recent recipient of the U.S. Presidential Award for Excellence in Science, Technology, Mathematics, and Engineering Mentoring; Dr. Laura O’Dell, winner of the U.S. Presidential Early Career Award for Scientists and Engineers and an NIH R01 researcher; and Dr. Leticia Velazquez, Director of the Computational Science Program -- completed their doctorates at major research institutions elsewhere and returned to UTEP because they recognized the opportunity that UTEP afforded them to mentor the next generation of students who will follow in their footsteps. A recent Alumni Survey showed that 42% of recent graduates enrolled in a graduate program within six years after graduation. UTEP is also ranked nationally as one of the top ten institutions of origin of Hispanic PhDs.
Recognizing Excellence

UTEП is proud to acknowledge former undergraduate researchers and current award winning faculty members as they mentor future generations.

Dr. Laura O’Dell:
Awarded 2008 U.S. Presidential Early Career Award for Scientists and Engineers; NIH R01 researcher

Dr. Benjamin Flores:
Awarded 2009 U.S. Presidential Award for Excellence in Science, Technology, Mathematics, and Engineering Mentoring

UTEП is singularly prepared to achieve its vision, having been on a trajectory of steady growth and capacity-building toward becoming a national research university for the past two decades. A major step forward was taken just over five years ago, in 2004, when The University of Texas System engaged the Washington Advisory Group (WAG) to review UTEП’s and three other UT System institutions’ strategies to become national research universities. For UTEП, the WAG Report stated that the University could achieve Carnegie Doctoral Research-Extensive status within 10-15 years with appropriate investment.

Validating the WAG report’s findings, the State of Texas and the University of Texas System have over the past several years invested more than $250 million in UTEП’s infrastructure, primarily facilities to support the University’s Science, Technology, Engineering, and Mathematics (STEM) research and educational programs. Included in this investment are the recently opened Bioscience Research Building and new buildings being constructed for the Departments of Chemistry and Computer Sciences and for the College of Health Sciences and the School of Nursing. These facilities and their state-of-the-art laboratories will foster interdisciplinary research, significantly enhance the research productivity of the
faculty and the quality of both undergraduate and graduate education programs conducted in them. Since 2004, UTEP has also received significant funding for its efforts to recruit and retain outstanding faculty from the UT System STARS program. UTEP STARS faculty include such nationally recognized researchers as Jorge Gardea-Torresdey, Professor of Chemistry; Ann Gates, Professor of Computer Science and Associate Vice President for Research; June Kan-Mitchell, an internationally recognized AIDS researcher and Professor of Biological Sciences; and Ryan Wicker, Professor of Mechanical Engineering and Director of the W.M. Keck Center for 3D Innovation.

UTEP Centennial Campaign

Established in 1914 as the Texas State School of Mines and Metallurgy, UTEP will commemorate its Centennial in 2014. In conjunction with this major milestone in the University’s history, UTEP has initiated a major fundraising campaign, whose goal of $200 million is expected to be reached by the end of 2014. The fundraising targets of the Centennial Campaign are well aligned with UTEP’s quest to become a national research university, including endowed faculty positions, graduate fellowships and undergraduate scholarships and support for priority research initiatives. (See Section VI for additional information about the Centennial Campaign.)

Plan for the Future

Our future is an extension of our present.

UTEP’s plan for the future is a natural expansion of the institution’s existing mission and does not reflect a substantial change in direction. UTEP’s strategic planning for research is based on four groups of objectives that deal with performance, growth, quality assurance, and efficiency gains. For each objective, quantitative outcomes have been determined and developed for the next decade. Table I-1 summarizes the key metrics of UTEP’s Strategic Plan for Research.
Performance: First, UTEP’s strategic planning for research identified the following two as key performance objectives:

- annual expenditure of at least $100 million in externally funded research, according to commonly accepted national standards; and
- annual graduation of approximately 200 PhD degrees.

Growth: Second, in order to achieve those outcomes, UTEP will have to grow in a number of critical dimensions, four of which have been identified as growth objectives. UTEP will increase its number of research-active faculty who are nationally competitive in acquisition of external funding and who will serve as the core faculty mentors and dissertation directors for doctoral students. UTEP is an emerging research university, and many of our doctoral programs are still within their first decade of operation. The University has yet to build out its full complement of PhD programs, and we have developed plans to grow current core faculty in strategically identified new areas of potential national distinction. New faculty and new doctoral programs will require significant increases in resources, including continuing growth at all programmatic levels as UTEP strives to meet the educational needs of a large and historically under-served population.

More students, more research, and more academic programs will all demand facilities, both new and renovated. These considerations will drive the following four supporting growth objectives:

- increase the number of tenured and tenure-track faculty from 508 to 720 by 2020;
- increase the number of PhD programs to 40 by 2020;
- increase student enrollment from 21,000 to 29,500 by 2020; and
- increase the provision of research, instructional, and associated support space by 3.2 million gross square feet by 2020.

Quality Assurance: Third, UTEP’s strategic plan monitors the quality of the educational experience for UTEP students by tracking two critical quality assurance objectives that indicate the access of students to faculty teachers and mentors:

- maintain the overall University student/faculty ratio at approximately 21:1 and
- maintain the number of doctoral students per tenured/tenure-track faculty member at less than 3:1.
These ratios have been set within the range of values at our aspirational peer institutions and those at leading Tier One institutions in Texas.¹

**Efficiency**: Fourth, our analyses show that our past growth has been accomplished in part by efficiency gains over the last 5-10 years. Our models for increased performance in funded research and in graduation of doctoral students both build in continued incremental efficiency gains in the following measures and associated efficiency objectives:

- increased annual dollar volume of sponsored research per tenured/tenure-track faculty member at a rate higher than the rate of inflation: The associated objective is to obtain an average annual increase, across the University as a whole, of at least 6%; and
- reduction in time to degree after doctoral coursework: All doctoral programs have a foundation of approximately three years of coursework and dissertation proposal development, and our models show possible efficiency gains in time- to- degree after coursework is completed. The associated objective is to increase by one percentage point each year the proportion of doctoral students, in their 4th year or longer, who graduate in a given year.

What strategies will UTEP need to deploy in order to achieve these objectives? UTEP has earned its place among the seven emerging research universities in Texas on the basis of its performance in recruiting top faculty, graduating students (especially large numbers of highly successful Hispanic students), and delivering competitively funded research and scholarship. While the State and the University of Texas System have made exceptional investments in facilities and major equipment, and the University has been one of the most successful public institutions in Texas in terms of private fund-

¹ For example, the student/faculty ratio at UT Austin is 19.4:1 while that at UC Riverside is 22.8:1. The number of doctoral students per tenured/tenure-track faculty at Texas A&M is 1.9:1 and at UT Austin is 2.7:1.
raising, the primary driver for increased performance has been the growth of the University itself.

The methodology behind UTEP’s strategic plan is not a set of optimistic statistical projections; rather, it is based on extensive institutional research to understand how we have performed over the last 5-10 years. The University developed mathematical models that explain growth patterns in research, degrees awarded, and faculty productivity. These analyses provided useful insights about efficiency gains and patterns of growth at the institutional and program level, and these insights were used to develop scenarios of future growth.

Two separate models were created for the key performance objectives:

- annual growth in doctoral graduates and
- annual growth in research expenditures.

Different scenarios for growth can be modeled by varying the changes in efficiency, strategic investment in new doctoral programs, graduate student funding, growth in tenured/tenure-track faculty, and increased faculty productivity in securing external grants. The determination of UTEP’s 2015 and 2020 targets with respect to doctoral degrees awarded and total research expenditures is based on the growth trends over the last five years, combined with iterative feedback provided by deans, chairs, and faculty.

UTEP’s strategic plan for research is not a static document. It comprises a set of models that are being continuously validated, refined and updated. The models will be transformed into web-based tools that will allow the academic administration and the faculty to track progress and to make strategic investments and adjustments at the program level to achieve the University’s 2015 and 2020 targets. The tools are also designed to model changes that emerge from the implementation of new doctoral programs, and the impact of strategic hires, such as those funded through UT System STARS awards or such State initiatives as the Emerging Technology Fund.

If UTEP maintains its best practices in growth of enrollment, faculty, program development, and research productivity, if there are modest incremental efficiency gains, and if the Centennial Campaign successfully achieves its funding goal in 2014, the outcomes derived from the models project that UTEP will be able to achieve its primary performance benchmarks of $100 million in externally funded research and 200 PhD graduates per year within 7-8 years, or approximately by
2017-18. With increased System, state, federal and/or private investment, the models project that UTEP will be able to achieve more aggressive and strategic research and doctoral program growth that will permit earlier attainment of the Tier One benchmarks.

UTEP’s federal research expenditures rank second only to UT Austin among UT System universities and second only to the University of Houston among the other emerging Tier One institutions. UTEP also excels in private giving, ranking first by a wide margin among the emerging Texas Tier One universities in the UT System. UTEP will celebrate its Centennial in 2014, and will incorporate the quest for Tier One into both the commemoration of this major institutional milestone and the fundraising associated with it. The University has already initiated the quiet phase of this Centennial capital campaign whose goal is expected to be $200 million and whose focus will be on securing funding for endowed faculty chairs and professorships, endowed graduate fellowships, undergraduate merit scholarships, and other investments to continue building the University’s excellence.
<table>
<thead>
<tr>
<th>Table 1.1: Research Strategic Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Key Metrics</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Tier One Performance Benchmarks</strong></th>
<th>2009-10</th>
<th>2014-15</th>
<th>2017-18</th>
<th>2019-20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research Expenditures</td>
<td>$59,145,012</td>
<td>$82,625,742</td>
<td>$103,645,692</td>
<td>$121,134,213</td>
</tr>
<tr>
<td>Doctoral Degrees Awarded</td>
<td>69</td>
<td>141</td>
<td>194</td>
<td>237</td>
</tr>
</tbody>
</table>

| **Growth**                          |
|-------------------------------------|---------|---------|---------|---------|
| T/TT Faculty (Fall)                 | 508     | 598     | 666     | 720     |
| Number of Doctoral Programs¹        | 16      | 30      | 36      | 40      |
| Total Headcount Enrollment (Fall)   | 21,011  | 25,135  | 27,390  | 29,403  |
| Research, Instructional & Associated Support Space (net assignable square feet) | 1.7M sq. ft. | 2.3M sq. ft. | 2.7M sq. ft. | 3.6M sq. ft. |

| **Quality Assurance**               |
|-------------------------------------|---------|---------|---------|---------|
| FTE Enrollment/FTE Faculty Ratio (Fall) | 21.2   | 21.6   | 21.2   | 21.0   |
| Doctoral Enrollment to T/TT Faculty | 1.0     | 1.5     | 1.8     | 2.0     |

| **Efficiency**                      |
|-------------------------------------|---------|---------|---------|---------|
| Research Expenditures per T/TT Faculty | $116,427 | $138,279 | $155,545 | $168,238 |
| Doctoral Degree Completion Efficiency | 0.29   | 0.34   | 0.37   | 0.39   |

<table>
<thead>
<tr>
<th><strong>Student Success – 21st Century Demographic</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual Baccalaureate Degrees – Total</td>
</tr>
<tr>
<td>Annual Baccalaureate Degrees – Hispanic</td>
</tr>
<tr>
<td>% Hispanic</td>
</tr>
<tr>
<td>Annual Master’s Degrees - Total</td>
</tr>
<tr>
<td>Annual Master’s Degrees - Hispanic</td>
</tr>
<tr>
<td>% Hispanic</td>
</tr>
<tr>
<td>Annual Doctoral Degrees – Total</td>
</tr>
<tr>
<td>Annual Doctoral Degrees – Hispanic</td>
</tr>
<tr>
<td>% Hispanic</td>
</tr>
</tbody>
</table>

¹ There are 6 additional Doctoral Programs currently under review at the THECB in 2010.
Section II: Plan to Increase Research Funding and Productivity

External Funding

Over the past 20 years, The University of Texas at El Paso has made a consistent and comprehensive commitment to build research capacity and create a campus climate conducive to growth in externally funded research.

UTEP has planned well, based on rigorous analysis of data, and has also remained flexible and nimble in responding strategically to opportunities to grow its research capacity. Progress has been remarkable: annual research expenditures grew from less than $5 million in FY 1989 to almost $60 million in FY 2009 (see Figure II-1). UTEP is well on its way to becoming a national research university and realizing the Tier One status projected by the Washington Advisory Group (WAG) in 2004: that, with appropriate investment by the UT System and the State of Texas, UTEP could be generating in excess of $100 million in sponsored research expenditures within a 10-15 year timeframe.
Major strategic investments, especially in science and engineering research and teaching facilities and equipment infrastructure have indeed been made by federal agencies, the State of Texas, industry partners, the University of Texas System, and UTEP itself. More than $250 million have been invested since 2004 in facilities on the UTEP campus. Enhancing UTEP’s research facilities has enabled the recruitment and retention of active faculty researchers who successfully compete for grants at the national level and whose grants, in turn, contribute to building UTEP’s competitiveness. In FY 2009, more than 250 UTEP faculty members were engaged as principal and co-principal investigators on proposals to secure external funding. These efforts led to a record 582 total proposals submitted that year. As a result of the significant growth in grant funding, UTEP has climbed 36 places in the National Science Foundation’s ranking of U.S. universities by total federally
financed R&D expenditures in the last five years, and now ranks 173rd among all universities nationally in annual federal research expenditures.

Among the strategies that continue to build UTEP into a national research university are the following:

- increasing the number of tenured and tenure-track faculty, especially in areas identified for research and doctoral program excellence;
- growing the number of strategically identified doctoral programs offered on the campus;
- competing successfully for high-caliber doctoral students; and
- continuing to engage in research and graduate education capacity-building.

These priorities will be firmly grounded in UTEP’s core mission to provide educational programs of the highest quality across the campus to the residents of the El Paso region and beyond.

**Research Funding Targets**

Based on current forecasts, UTEP will be able to achieve its primary national research university benchmarks of $100 million in externally funded research and 200 PhD graduates per year in the 2017-18 timeframe (see Table I-1 and Figure II-2). With the additional strategies, goals, and objectives that have been developed in this Strategic Plan for Research, UTEP is well positioned to respond effectively to any new opportunities and incentives that could improve external research funding outcomes and faculty research productivity – in which case, the timetable for attaining these benchmarks would be accelerated.
The University of Texas at El Paso current linear trend from FY2008 to 2009 forecasts that the $45 million in restricted research expenditures required by HB 51 for National Research University Fund (NRUF) could be reached by the end of Fiscal Year 2012. Figure II-3 presents the growth of restricted research expenditures that UTEP has reported to the Texas Higher Education Coordinating Board since FY 2005. The goal will be to accelerate attainment of this $45 million restricted research goal before FY 2012.
Monitoring Progress

In the context of the recent rapid growth in sponsored program activities on the UTEP campus, the Office of Research and Sponsored Projects (ORSP) has introduced efficiencies by enhancing the research administration function through electronic tools and centralized information on proposals and awards. One of these innovations has been the development of a web-based data portal that queries information as a function of faculty, departments, colleges, and centers. The system is now capable of producing standard reports that are regularly used by the University community to monitor research productivity in terms of specific indicators such as proposals and external awards.
ORSP will continue to develop its reporting system to provide additional information and mechanisms that can be used, on a quarterly basis, to monitor progress in moving toward our national research university goals. The following information will be tracked for benchmarking progress in increasing extramural funding:

- number of competitive proposals and awards,
- proposal success rates,
- proposals, awards and funding in specific research priority areas,
- number of proposals and awards above $500,000, and
- number of multidisciplinary proposals and awards.

Further, the ORSP will also provide enhanced financial expenditure report services to assist in monitoring account balances to ensure expenditures remain in line with grant budgets.

**Comparisons to Texas and National Peers**

UTEP will benchmark itself against several sets of institutions to ensure that internal assessments of progress will be well grounded in both state and national contexts and that the challenge of identifying institutions that are truly well-aligned with UTEP’s unique profile can be adequately addressed — a combination of Hispanic and low-income student demographics, a mining school with a strong STEM legacy, and an established trajectory towards recognition as a national research university (see Table II-1).

First, to monitor developments within Texas, we will track the progress of the other six Emerging Texas Tier One universities.

Second, we have identified a set of Emerging National Research Universities outside of Texas that are as comparable as possible to where UTEP expects to be between now and 2020:

- public institutions that currently generate between $100-150 million in sponsored research expenditures;
- that graduate about 125-250 doctoral degrees each year;
- with an overall headcount enrollment up to about 30,000 , and
that have a tenured/tenure-track faculty of 500-1,100 (UTEP projects 720 by 2020).

All of the six exceed $100 million in annual research expenditures, and three of them graduate more than 200 doctorates a year (Auburn University, University of California--Riverside, and the University of Delaware). Four of them are land-grant universities and so have access to research funds that UTEP will not have (Arkansas, Auburn, Delaware, and Oklahoma State).

Three of the Emerging National Research Universities that have exceeded $100M in annual research expenditures have substantially more tenured/tenure-track faculty than the 720 that UTEP projects to have acquired by 2020: Auburn University with 1,072; Oklahoma State University with 998; and the University of Delaware with 851. The same pattern is evident in the Emerging Texas Tier One institutions – all of the three that graduate more than 200 doctorates (Texas Tech University, the University of Houston, and the University of North Texas) have high enrollments (28,422-36,080) and a large number of faculty (775-936). Only the University of California Riverside has achieved the Tier One benchmarks with fewer than 700 faculty. The challenge for UTEP will be to achieve a higher yield on institutional investments, including highly strategic hiring and promotion of faculty, which will enable us to grow our research and doctoral production more efficiently than other Texas and national peers.

Finally, we have identified a set of leading national research universities that will enable us to continue raising performance expectations across the campus. They are much larger on all dimensions and show us the effects of scale in research university performance.
Table II-1: Texas and National Peers

<table>
<thead>
<tr>
<th>Emerging Texas Tier One Universities</th>
<th>Total Research Expenditures 2008 (x1000)</th>
<th>2008 Total Doctoral Degrees</th>
<th>2008 Total FT T/TT Faculty</th>
<th>Estimated Total Enrollment Fall 2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of Houston</td>
<td>84,490</td>
<td>259</td>
<td>891</td>
<td>36,080</td>
</tr>
<tr>
<td>The University of Texas at Dallas</td>
<td>59,300</td>
<td>121</td>
<td>391</td>
<td>14,940</td>
</tr>
<tr>
<td>Texas Tech University</td>
<td>57,902</td>
<td>230</td>
<td>936</td>
<td>28,422</td>
</tr>
<tr>
<td>The University of Texas at El Paso</td>
<td>48,906</td>
<td>37</td>
<td>469</td>
<td>20,458</td>
</tr>
<tr>
<td>The University of Texas at Arlington</td>
<td>43,005</td>
<td>153</td>
<td>579</td>
<td>25,070</td>
</tr>
<tr>
<td>The University of Texas at San Antonio</td>
<td>33,106</td>
<td>57</td>
<td>561</td>
<td>28,413</td>
</tr>
<tr>
<td>University of North Texas</td>
<td>15,932</td>
<td>200</td>
<td>775</td>
<td>34,795</td>
</tr>
<tr>
<td>Emerging National Research Universities</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Auburn University Main Campus</td>
<td>146,984</td>
<td>205</td>
<td>1,072</td>
<td>24,530</td>
</tr>
<tr>
<td>University of California-Santa Cruz</td>
<td>135,261</td>
<td>131</td>
<td>521</td>
<td>18,508</td>
</tr>
<tr>
<td>University of California-Riverside</td>
<td>129,605</td>
<td>224</td>
<td>654</td>
<td>18,405</td>
</tr>
<tr>
<td>University of Delaware</td>
<td>125,179</td>
<td>208</td>
<td>851</td>
<td>20,500</td>
</tr>
<tr>
<td>Oklahoma State University-Main Campus</td>
<td>121,226</td>
<td>142</td>
<td>998</td>
<td>22,768</td>
</tr>
<tr>
<td>University of Arkansas Main Campus</td>
<td>102,784</td>
<td>144</td>
<td>721</td>
<td>19,194</td>
</tr>
<tr>
<td>Leading National Research Universities</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>University of California—Los Angeles</td>
<td>871,478</td>
<td>752</td>
<td>1,782</td>
<td>37,782</td>
</tr>
<tr>
<td>University of California—Berkeley</td>
<td>591,770</td>
<td>873</td>
<td>1,365</td>
<td>35,353</td>
</tr>
<tr>
<td>University of Florida</td>
<td>584,170</td>
<td>857</td>
<td>2,916</td>
<td>51,475</td>
</tr>
<tr>
<td>University of Arizona</td>
<td>545,869</td>
<td>451</td>
<td>1,540</td>
<td>38,057</td>
</tr>
<tr>
<td>The University of Texas at Austin</td>
<td>493,294</td>
<td>813</td>
<td>1,958</td>
<td>49,984</td>
</tr>
</tbody>
</table>
Benchmarking comparisons with the other Texas institutions will be done primarily through data reported to the Texas Higher Education Coordinating Board. Comparisons with out-of-state institutions will be made using the research statistics published by the Division of Science Resources Statistics (SRS) of the National Science Foundation (NSF) and other national data sources. Both total and federally-funded R&D expenditures will be tracked; for example, Tables II-2 and II-3 present the total R&D and federally-financed R&D expenditures for the Texas Emerging Tier One Universities. UTEP ranks 173rd nationally on both dimensions.

Table II-2: Total R&D Expenditures (Science and Engineering) for Emerging Tier One Universities

Ranked by FY 2008 R&D Expenditures

(Source: NSF SRS, FY 2008)

<table>
<thead>
<tr>
<th>Rank</th>
<th>Institution</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>140</td>
<td>U. Houston</td>
<td>51,567</td>
<td>59,707</td>
<td>63,455</td>
<td>60,962</td>
<td>80,731</td>
<td>75,662</td>
<td>73,542</td>
<td>84,490</td>
</tr>
<tr>
<td>161</td>
<td>U. TX Dallas</td>
<td>15,684</td>
<td>26,198</td>
<td>30,748</td>
<td>31,274</td>
<td>43,111</td>
<td>44,198</td>
<td>46,477</td>
<td>59,300</td>
</tr>
<tr>
<td>166</td>
<td>TX Tech U.</td>
<td>69,918</td>
<td>82,785</td>
<td>92,515</td>
<td>57,592</td>
<td>56,623</td>
<td>58,591</td>
<td>57,878</td>
<td>57,902</td>
</tr>
<tr>
<td>181</td>
<td>U. TX Arlington</td>
<td>17,486</td>
<td>15,097</td>
<td>15,102</td>
<td>19,003</td>
<td>28,971</td>
<td>29,267</td>
<td>32,734</td>
<td>43,005</td>
</tr>
<tr>
<td>202</td>
<td>Antonio</td>
<td>11,331</td>
<td>11,115</td>
<td>13,654</td>
<td>15,738</td>
<td>22,429</td>
<td>30,259</td>
<td>30,542</td>
<td>33,106</td>
</tr>
</tbody>
</table>
**Table II-3: Federally-Financed R&D (S&E) Expenditures for Emerging Tier One Universities**

Ranked by FY 2008 R&D Expenditures
(Source: NSF SRS, FY 2008)

<table>
<thead>
<tr>
<th>Rank</th>
<th>Institution</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>149</td>
<td>U. Houston</td>
<td>21,876</td>
<td>31,455</td>
<td>32,556</td>
<td>34,468</td>
<td>37,262</td>
<td>38,559</td>
<td>40,116</td>
<td>43,162</td>
</tr>
<tr>
<td>190</td>
<td>U. TX San Antonio</td>
<td>8,012</td>
<td>7,111</td>
<td>9,982</td>
<td>11,644</td>
<td>15,924</td>
<td>20,277</td>
<td>20,545</td>
<td>21,523</td>
</tr>
<tr>
<td>191</td>
<td>U. TX Dallas</td>
<td>7,049</td>
<td>11,624</td>
<td>14,530</td>
<td>15,733</td>
<td>19,933</td>
<td>19,954</td>
<td>17,783</td>
<td>21,383</td>
</tr>
<tr>
<td>196</td>
<td>U. TX Arlington</td>
<td>9,413</td>
<td>7,848</td>
<td>7,884</td>
<td>10,498</td>
<td>17,654</td>
<td>19,006</td>
<td>19,774</td>
<td>20,721</td>
</tr>
<tr>
<td>199</td>
<td>TX Tech U.</td>
<td>22,967</td>
<td>28,202</td>
<td>31,776</td>
<td>23,181</td>
<td>22,071</td>
<td>22,278</td>
<td>22,874</td>
<td>19,698</td>
</tr>
<tr>
<td>259</td>
<td>U. North TX</td>
<td>5,401</td>
<td>6,015</td>
<td>6,320</td>
<td>5,499</td>
<td>7,003</td>
<td>8,343</td>
<td>7,192</td>
<td>8,241</td>
</tr>
</tbody>
</table>

**Research Priorities**

UTEP’s growth in research over the last 2 decades could not have been accomplished without the active participation of faculty, staff, and student researchers in all disciplines and program areas.

This campus-wide commitment to research development is critical not only to realizing UTEP’s national research university aspirations, but fundamental to meeting UTEP’s commitment to achieve both access and excellence. This includes enhancing the quality of the undergraduate experience and challenging its mostly first-generation, low-income, and Hispanic students, enabling all students to reach their full potential. Excellence in undergraduate education is not an incidental outcome of our commitment to research; UTEP has made a commitment toward the excellence of a national research university precisely because we want to ensure that we offer our students the quality educational experience that they have every right to expect. UTEP has demonstrated that research has a powerful
impact on their education, from curricula that incorporate the most current advances in research to students’ direct participation in research activities, both on campus and in the field.

While the focus in this section is on externally funded research, it is important to emphasize that there are numerous areas of research, scholarship and creative activity at UTEP for which available external funding is typically modest, but which nonetheless bring considerable prominence and recognition to UTEP faculty, students and programs. Such areas include: the history of the U.S.-Mexico borderlands; immigration history and policy studies; social and behavioral science studies of issues associated with the fast-growing U.S. Hispanic population; bilingual/bicultural language acquisition and education of Hispanics in the U.S.; and international business, especially with regard to Mexico and Latin America. This work provides insights into such critical contemporary issues as human and drug trafficking and informs public policy in such areas as education, health, the environment, border security, and immigration. Finally, UTEP’s unique U.S.-Mexico border location and long-standing cultural ties with Latin America afford a rich context for creative artists and writers whose work, which has brought the University considerable distinction, is often a reflection of the many strong cross-currents that energize the borderlands region.

Research Review and Planning

This Strategic Plan for Research has been developed within the context of multiple ongoing institutional strategic planning processes. The University periodically issues a comprehensive institutional strategic plan, the latest of which was prepared in 2007 and covers the period 2008-15; it contains a major section on Research, Scholarship and Artistic Production (see pp. 8-10)². This 2007 Strategic Plan built upon external reviews conducted by the Washington Advisory Group, which was engaged by the University of Texas System, and the UTEP Centennial Commission, both of which reported in 2004 ³ ⁴. The Centennial Commission comprised 100 external stakeholders including alumni and El Paso-Juarez community members, charged with articulating a vision of UTEP in 2014, the University’s 100th anniversary. Among the areas on which the Commission focused its attention was the continued development of UTEP’s research agenda, particularly as it may apply to regional opportunities and challenges. An internal

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UTEP Research Task Force was subsequently charged with responding to the Commission’s recommendations by preparing a Research Roadmap for increasing externally funded research growth⁵.

Five years later, in 2009, UTEP revisited the research priorities identified in the 2004 Research Task Force document, reviewed research activity at the University over the past five years, analyzed current research funding priorities of federal agencies, conducted a faculty and research staff survey, and held an extensive discussion of research priorities at a retreat that included deans, as well as selected faculty at different stages of their careers, department chairs and research center directors.

The comprehensive five-year assessment process confirmed that the strategic assets identified by the 2004 Research Task Force continue to provide UTEP a comparative advantage in shaping a competitive research agenda. Among these assets are:

- UTEP’s location in the largest binational metropolitan area (“borderplex”) in the world, with a population of more than two million residents;
- UTEP’s proximity to one of the busiest border crossings between the U.S. and Mexico;
- the arid environment of the surrounding high Chihuahuan Desert, together with binational air space and watersheds;
- the University’s proximity to major international manufacturing complexes that are an integral part of the industrial outsourcing characteristic of the global economy of the 21st century;
- the University’s access to major national defense and border security installations; and
- UTEP’s status as the only research university in the U.S. with a Mexican-American majority student population.

⁵ Research RoadMap: http://ia.utep.edu/Portals/569/Research(TF).pdf
Identifying Research Priorities

UTEP’s research priorities, shown in Figure II-4, build on the strong foundation already established during UTEP’s remarkable growth in both research and doctoral education during the past 20 years. They seek to align the assets derived from the institution’s significant accomplishments, the expertise of veteran and newly hired faculty members, the growth and development of doctoral programs in key areas of strength, and the major infrastructure investments on the UTEP campus. The research priorities also align with the unique characteristics of UTEP’s location and the unique needs and opportunities presented by the region which it has made a commitment to serve since its establishment in 1914 as Texas School of Mines and Metallurgy-- in particular UTEP’s mission to contribute to the human and economic development and quality of life of the Paso del Norte region.

The solid circles of Figure II-4 present the research priorities, and the rings of varying colors denote the cross-cutting themes that make significant contributions to, and broaden the impact of the various research priorities. As an institution that has evolved to meet the challenges of the 21st century, the University capitalizes on its record of building strong interdisciplinary research, promoting cyber-enabled technologies and computational tools, and integrating research and education to create the synergistic environment required for conducting successful transformative and translational research for and with our students. Over the last five years, UTEP has been establishing the technical infrastructure, creating a knowledge base for sharing data and resources, providing training opportunities that allow faculty to enter new areas of research, and providing other support to create collaborations among faculty from different disciplines and across institutions. Many of these collaborations occur through research centers, laboratories and organized faculty groups.
Figure II-4: Research Priorities and Cross-Cutting Research Themes

Cross-Cutting Research Themes

<table>
<thead>
<tr>
<th>Cyberinfrastructure and Collaborative Environments</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S.-Mexico and Latin America: Social and Behavioral Issues</td>
</tr>
<tr>
<td>Emerging Technologies: Information Technology, Biotechnology, &amp; Nanotechnology</td>
</tr>
</tbody>
</table>
Priority Area: Health & Biomedical Sciences and Engineering
Addressing key border health issues and Hispanic health disparities by understanding complex living systems and defining new biomedical technologies and therapies.

**Background.** The Southwest region of the United States, including Texas, Arizona, New Mexico, and southern California, shares a 2,000 mile border with Mexico. The region as a whole constitutes a unique physical, social, cultural, and economic environment, one that is made all the more distinct by its proximity to transnational flows of resources and population groups, both of which have contributed to rapid and substantial socio-economic transformation of the region. Many of these factors have resulted in significant increases in health problems and regional population disparities in health-related services and outcomes.

**Building Partnerships to Address Border Health Issues**

**Maria Amaya.** Wakefield Distinguished Professor in the School of Nursing, leads a multidisciplinary team of UTEP scientists and community health workers pioneering studies on environmental lead exposure among children in the border community of El Paso/Cd. Juárez.
A high percentage of the border population suffers from a wide range of health problems, many of which are more typically found in developing countries, including tuberculosis, gastrointestinal and respiratory diseases. Similarly, rates of heart disease, cancer, depression, substance abuse, incidences of violence, and diabetes are often higher than those in other areas of the United States. The root causes of these conditions are multiple and complex, and include the fact that much of this border population has limited access to preventive healthcare, as well as appropriate patient management, treatment, and care.

**Current Status.** With awards of more than $42 million over the last five years, research at UTEP in Health & Biomedical Sciences and Engineering has already achieved national distinction. Research is conducted across multiple colleges at the University, including Science, Engineering, Health Sciences, Liberal Arts, and Education, as well as the School of Nursing. Research is supported by doctoral programs in Psychology, Biological Sciences, Interdisciplinary Health Sciences, Chemistry, and a proposed new doctoral program in Biomedical Engineering.

In addition, three Centers anchor research in this area: the Border Biomedical Research Center (BBRC), the Hispanic Health Disparities Research Center (HHDRC), and the W.M. Keck Center for 3-D Innovation.

The research in BBRC focuses on the following four major areas:

- **Infectious Diseases and Immunology,** addressing key border health issues such as drug resistant tuberculosis, HIV, West Nile virus, H1N1 influenza virus, and issues related to potential bioterrorism.
- **Toxicology,** including high throughput drug screening for gene expressions and cell imaging analysis for toxicity.
- **Cancer Biology,** with a focus on blood-borne diseases such as leukemia, lymphoma, and multiple myeloma, as well as breast, prostate and liver cancers.
- **Neuroscience and Metabolic Disorders,** focusing on the neural, cognitive and behavioral mechanisms associated with drug abuse and addiction, stress, and
exposure to environmental toxins, and their relationships to diabetes and cardiovascular diseases.

The HHDRC seeks to address critical Hispanic health disparities through research in such areas as child obesity, cardiovascular disease, global health, mental health, and disability prevention. This work is of national significance and urgency because of the rapid growth of Hispanic populations in Texas and many other regions of the U.S.6.

The W.M. Keck Center for 3-D Innovation works in the area of biomedical engineering, in particular tissue regeneration, and functional manufacturing. The Center provides labs for cardiovascular hemodynamics, tissue engineering, and anatomical modeling. The manufacturing labs contain equipment for rapid prototyping and tooling, microfabrication, and advanced materials research.

**Priority Area: Energy & Environment**

*Studying the impact of environmental change and the shrinking supplies of water, energy, and other resources regionally in the Chihuahuan Desert and globally, to provide solutions that sustain and improve the quality of life.*

**Background.** UTEP’s location in the arid Southwest region of the U.S. and in a bi-national metropolitan area of more than two million residents offers unique opportunities to conduct research on the environment and natural resources, on energy, and on binational policy issues related to each.

The University has faculty strengths and world-class research facilities and infrastructure in the following areas:

- Air quality, specifically particulate matter and associated heavy metals and other pollutants
- Environmental health, in particular health impacts from air quality, pesticide exposure, occupational safety of farm workers, and environmental justice
- Water conservation and quality (surface and groundwater), in particular salinity concentrations and sources and pollutants associated with treated wastewater

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Energy & Environment

UTEP’s Indio Mountains Research Station (IMRS) is a scientific research and educational field station of ~38,000 acres located in southern Hudspeth County, Texas.

UTEP is a member of the Chihuahuan Desert Biosphere Reserve Technical Group. This organization links the Biosphere Reserves of Mapimí (Mexico), Big Bend National Park (Texas), and the Jornada Experimental Range (New Mexico).

Environmental research is based on the arid landscape of the region dominated by the Chihuahuan Desert, mountain ranges of the Rocky Mountain system, alluvial plains, and the Rio Grande River. Critical environmental challenges, especially in the face of climate change, include: 1) conservation and protection of limited but vitally important water resources; 2) protection of fragile Chihuahuan desert and mountain ecosystems; 3) improved monitoring and management of the Rio Grande with respect to both water quantity and quality, and restoration and management of its associated riparian wetlands as a key wildlife habitat; and 4)
identifying and mitigating air quality impairments, especially those that pose public health risks.

The energy R&D program has an overarching emphasis on energy security and sustainability and is strategically aligned with fossil and renewable energy, aerospace propulsion, and climate change research areas of critical national needs. Through strategic partnership with industries, DOE laboratories, federal agencies, local government, and major research universities, the energy and propulsion research group has been aggressively developing its research capability in energy and aerospace power and propulsion areas. With a mean annual solar insulation over 240 watts per square meter, El Paso is one of the most promising locations in the world for performing solar energy research.

Current Status. With research awards of more than $22 million, leadership in the areas of environment and energy is provided by the Center for Environmental Resource Management (CERM), the newly established Center for Inland Desalination Systems (CIDS), and the Center for Space Exploration Technology Research (cSETR). The CyberShARE Center of Excellence also supports projects in these areas.

CERM provides university-wide leadership and coordination for energy and environmentally-related academic, policy, research, and service activities. Faculty and staff from CERM conduct research on: air and water-related issues; hazardous substances; energy efficiency and conservation; alternative and renewable energy; environmental health; desert ecosystems; and environmental policy and justice. CERM manages the Rio Bosque Wetlands Park for the City of El Paso.

CIDS was established as a center of excellence for inland desalination research, education, technology transfer, and commercialization with an investment from the Texas Emerging Technology Fund and matching funds from UTEP and the University of Texas System. The Center has established a partnership with the El Paso Water Utilities and the Public Service Board to leverage the largest inland desalination plant in the world, the Senator Kay Bailey Hutchison Desalination Plant. CIDS staff and faculty conduct research on: energy-efficient processes, membrane system design and performance, characterization of brackish water, and concentrate management. CIDS will enhance industrial productivity in Texas by both stimulating technology transfer and removing water supply as a limiting factor in industrial development.
UTEP’s current energy research portfolio includes a diverse range of industrial and federally funded projects ranging from coal derived clean syngas fuels to advanced energy harvesting materials. A new Structural and Printed Emerging-technologies Center (SPEC) also provides cutting-edge manufacturing facilities for advanced solar photovoltaic research. cSETR was established to promote research and education in energy and propulsion engineering. As a NASA-funded research center, cSETR actively conducts a wide range of analytical, experimental and computational research in energy and propulsion engineering with a particular interest in green propulsion, in-situ resource utilizations, space structures, clean power generation, solar energy and carbon dioxide sequestrations. In addition, UTEP will seek to work with Ft. Bliss to capitalize on its designation as the U.S. Army’s Center for Renewable Energy. The goal of the Department of Defense is to make military installations energy independent of the national grid, and Ft. Bliss is becoming the test-bed for renewable energy systems, both static base-support systems, and transportable systems for deployable forces.

Priority Area: Education for the 21st Century Demographic

Conducting rigorous educational research to improve teaching and learning, prepare students from diverse populations to become innovative and productive members of a global society, and develop policy.

Background. UTEP has leveraged its unique location and regional population to build outstanding research programs related to education policy and practice in the southwestern U.S. and especially along the U.S.-Mexico border. With the rapid growth of the Hispanic population nationally, this work will have implications for educational institutions at all levels across the United States. Twenty years ago, UTEP recognized that as a public university located in this far west Texas-Mexico border location, it had a responsibility to create higher education opportunities for the historically undereducated population of the region. UTEP also recognized that 80% of UTEP’s students were graduates of high schools in El Paso County, and two-thirds of the teachers received their degrees from UTEP, creating a “closed-loop” setting where educators at all levels are jointly accountable for the region’s educational outcomes and where vertical integration of PreK-16 education was critical. To that end, two decades ago UTEP led the establishment of the El Paso Collaborative for Academic Excellence, a partnership that included all school districts in El Paso County and the El Paso Community College, as well as civic and political leadership.
The University of Texas at El Paso

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UTEP faculty are also conducting extensive research in science and engineering education that seeks to develop novel ways to improve curricula and enhance students’ capabilities. The University is strongly committed to research partnerships that link faculty across colleges and departments and between the University and regional schools and communities to improve educational achievement at all levels, Pre-K through graduate school.

UTEP’s focus on education for the 21st century demographic extends beyond a narrow view of educational research to a broader mission to help the nation recognize the extraordinary talent within the Hispanic populations. This will require change in the nature of the arts and literature that have historically been exclusionary. It can drive change in the public schools to more engaging pedagogy for young Mexican-Americans who will see that their cultural traditions and expressions have a legitimate place in the arts and humanities.

**Current Status.** UTEP has achieved national recognition over the past two decades for developing models to improve the academic achievement of PreK-16 students in math, science, literacy, and technology. These models have been developed under external sponsorship, including NSF-funded programs such as the El Paso Collaborative for Academic Excellence’s Math-Science Partnership (MSP) and Urban Systemic Initiative/Program (USIC and USIP), the Model Institutions for Excellence (MIE), and the Carnegie Corporation-supported Teachers for a New Era (TNE) Program.

Another group of UTEP researchers is conducting cognitive research on English language learners that can help both university faculty and teacher education programs make teaching more effective. Psychology faculty, for example, conduct NIH-funded research that examines the cognitive processes underlying adult bilingual reading through the use of eye-movement monitoring technology. This basic research on reading will enable
educators to better address the needs of second language learners, a group that comprises a significant proportion of El Paso students.

College of Education researchers have developed major externally-funded projects in: dual language education, literacy and bi-literacy, and language acquisition in schools; home literacy practices in immigrant communities; a special borderlands initiative on the effectiveness of integrated schools; and models of teacher preparation in the *Escuelas Normales* and methodologies on the education of indigenous children living in rural communities throughout the state of Chihuahua.

Research in the College of Engineering is moving UTEP to the forefront of national efforts to “reinvent” engineering education. Based on former University of Michigan President James Duderstadt’s “Engineering for a Changing World,” the College proposes a new paradigm for the education of the engineering leaders of the 21st Century. The Duderstadt model mirrors the medical school training model: with a broad-based baccalaureate curriculum of engineering design, project management, and innovation, along with business, communication, ethics, and social sciences; followed by a professional Master’s program in a specific discipline or concentration.

Finally, UTEP’s educational research extends throughout PreK-16 to studies of higher education, supported by the Center for Research on Educational Reform which has secured over $14 million in external funding since its inception in 2002. This is also an area of high demand for Hispanic leaders and university professors and a new PhD program is being planned (see section IV). UTEP’s own institutional research unit, the Center for Institutional Research, Evaluation and Planning, has secured funding from the Lumina Foundation and UTEP’s evolution as an emerging national research university is attracting faculty and doctoral student researchers at UTEP and from other universities.

**Priority Area: National Defense and Border Security**

*Meeting the needs of agencies responsible for the protection, safety and fostering of future economic integration opportunities along the U.S.-Mexico border.*

**Background.** UTEP is ideally positioned to conduct state-of-the-art research on national defense and security as well as border, immigration, and social issues and their policy implications. The University is situated close to Ft. Bliss, White Sands Missile Range, and Holloman Air Force base, installations that require basic
and applied research in science and engineering, and just a few hundred yards from the U.S.-Mexico border. Its location provides a natural laboratory for research on issues such as immigration, drug-related violence, and ways to combat bioterrorism.

UTEP faculty have conducted state-of-the-art research on a broad array of legal issues of longstanding interest to social and behavioral scientists, as well as legal scholars. UTEP’s internationally acclaimed Psychology and Law research program, for example, is well positioned to contribute to improved judicial policy and procedures and a variety of criminal justice policies and procedures that relate to national security.

With the Base Realignment and Closure (BRAC) actions, troop strength at Ft. Bliss will triple as the base is transformed to the home station of a large contingent of ground combat forces and the Army’s ground combat modernization program, the Future Force Integration Division (FFID). All the newest Army ground combat systems will come to Ft. Bliss and the FFID for operational testing, which will attract a large number of defense contractors to support the research, development, testing and evaluation of these systems. The region is also the home for the multi-agency El Paso Intelligence Center (EPIC) and the Joint Task Force North. These agencies deal with the identification and interdiction of suspected transnational threats within and along the approaches to the continental
United States, require high tech support and, like Ft. Bliss, attract a large number of defense and technology contractors.

**Current State.** With funding of over $14 million, National Defense and Security is an area of nationally recognized research at UTEP. Several inter-disciplinary research centers and laboratories contribute to this work.

The Center for Defense Systems Research (CDSR) was established in 2006 to apply a broad range of cutting-edge research and technology to provide near-term, applied, user-level, multi-use technical solutions for the Departments of Defense and Homeland Security. Research areas include: sensor design for unique situations; network science; IED detection and neutralization; information fusion and decision science; autonomic imagery manipulation to reduce requirements for power, bandwidth and data storage; and information assurance. The Center plans to expand into areas of biological and chemical agent sensors and bio-inspired systems.

The National Center for Border Security and Immigration (NCBSI) is funded by the Department of Homeland Security to develop educational and research programs for future scientists, technicians, engineers, and mathematicians to meet emerging challenges of homeland security in a global context. Integrated with the research program is a strong educational component that translates NCBSI’s research lessons learned into educational products for homeland security professionals as well as future academics.

Dr. Christian Meissner and his colleagues in the Investigative Interviewing Laboratory in the Department of Psychology study the social and cognitive psychological processes that underlie the interviewing of individuals in forensic settings. As such, their research has three primary foci, including (1) factors that influence eyewitness memory and lineup identification; (2) the detection of deception in forensic interviews; and (3) techniques employed in the interrogation of suspects.
of suspects and other non-cooperative individuals that lead to confessions. Researchers in the Investigative Interviewing Laboratory apply basic research in social and cognitive psychology to develop interview protocols and identification methods that will improve the diagnostic value of information obtained by law enforcement and intelligence personnel.

UTEP has proposed the establishment of a Center for Research on Human Intelligence and Counterintelligence to be a source for independent, scientific assessment of key issues relevant to the intelligence community. In addition, the Center will improve the nation’s capabilities for gathering effective and accurate information by conducting experimental, field, and instructional-based research projects leading to reliable operational practices within the intelligence community.

The Eyewitness Identification Research Laboratory, also located in the UTEP Psychology Department, focuses on studying eyewitness memory, eyewitness identification, expert testimony and many aspects of face recognition. The accuracy of eyewitness identification is of importance to law enforcement and the judiciary as well as the efficacy of efforts to address challenges to health and safety.

Criminal Justice Professor Fernando Rodriguez directs UTEP’s new criminal justice laboratory for the assessment of open source materials. This federally funded laboratory uses digital technology and trained bilingual student research assistants to assemble information from public legal records and a variety of unclassified documents as well as fully accessible periodicals to build a large informative data base about criminal activity. The Open Source Laboratory serves as an objective information resource that supplies accessible data to scholars and decision-makers about criminal victimizations and changing patterns.
### Priority Area: Global Enterprise and Border Studies

*Individuals, Organizations and Markets – Researching the causes and consequences of globalization to inform academia, practitioners, and policy groups and to advance understanding of globalization on the border, in the Western Hemisphere, and in the world.*

**Background:** Global Enterprise is the nexus of ventures, projects, and activities that are created, managed, and developed by individuals, organizations, and markets as a manifestation of globalization. Globalization is the ongoing process by which regional economies, societies, and cultures become integrated or interact. Globalization most frequently refers to the integration of national economies through trade, foreign direct investment, capital flows, mobility of labor and management, and the diffusion of technology but it is also extended to encompass social, political, and cultural processes.

The recent global credit crisis that resulted in a forty-five percent (45%) reduction in global wealth – estimated in U.S. dollars at more than $50 trillion – is a systemic “shock” on the scale of the Sputnik Crisis of the late 1950’s and the unraveling of the Soviet Union and the COMECON block in the late 1980’s. It offers further evidence of the cost of surprise and a compelling example of global integration. There is little doubt that global enterprise will drive future world events. New research funding agencies and new directions for current federal funding agencies must emerge to support knowledge discovery in an area with such impact on the design, deployment, and development of financial, physical, and human capital resources. UTEP foresees the inevitability of research funding policy change and is taking a more ambitious and entrepreneurial stance, which is the hallmark of a major research institution. UTEP is directly investing in Global Enterprise as a major research initiative for the next decade and beyond.

UTEP’s border location, its regional constituency of over 2 million multi-cultural and binational residents, and the confluence of national and international systems, mores, codes, and behaviors create a real-time, intrinsic laboratory from which research discovery informs academic programs for the competitiveness of its students, the development of its regional communities, and for the national and international discourse regarding Global Enterprise.

**Current Status.** UTEP, through its colleges and research centers, and private sector support are the primary investors in the Global Enterprise research initiative at this
time. Directed investment in doctoral programs is the primary UTEP investment supplemented by research center support. Private sector support directed towards Global Enterprise research is in the form of research grants, endowed chairs and professorships, and graduate student support.

Doctoral programs that support the social, political, cultural, and communications context of Global Enterprise are recent and emerging investments of UTEP. Students in the International Business PhD program pursue one of five general research areas within the context of Global Enterprise: accounting systems, financial economics, strategic information systems, marketing, and management. Twenty new faculty members in the College of Business Administration have been hired over the last five years in support of this core research program in Global Enterprise.

Doctoral students in Teaching, Learning, and Culture research issues of teaching and learning within diverse social contexts so as to improve the education of local, national, and international communities. Newly proposed and planned PhD programs in Transnational Society, Culture, and Politics, Communication and Social Change, and Public Administration will all support research in the socio-cultural and political dimensions of Global Enterprise.

The College of Liberal Arts has proposed a Transnational, Society, Culture, and Politics PhD Program that is multidisciplinary in nature and explicitly emphasizes the transnational character of today’s global environment. This unique degree program will draw on the research expertise of UTEP faculty who have found that previously accepted theoretical models of culture, politics, and economics do not accurately describe the interconnected nature of border politics and economics. Another new doctoral program in Communication and Social Change will further place UTEP at the forefront of the educational community’s effort to understand the impact of media on human behavior and social institutions.

Both current and emerging research centers are essential elements of the Global Enterprise research thrust: the Border Region Modeling Project (BRMP), the Center for Inter-American and Border Studies (CIBS), the Center for Hispanic Entrepreneurship (CfHE), the Center for Global Enterprise and Economic Freedom (CfGEEF), and the Center for Business Ethics and Multi-Cultural Management (CfBEMM).

Finally, national and international partnerships will play a critical role in the development of the Global Enterprise research domain. The Organization for
Economic Cooperation and Development (Paris, France), the Federal Reserve Bank of Dallas, and the U.S. Departments of Commerce and Education are current partners from the policy and federal government sectors. Current international university partners include: Czech Technical University (Prague, Czech Republic), European Business School (Germany), ITESM (Monterrey, Mexico), Prague Business School (Prague, Czech Republic), University of Basle (Switzerland), Universität Bundeswehr (Germany), Université Catholique de Lille (Lille and Paris, France), University of Chile (Santiago, Chile), Universidad Pacifico (Lima, Peru), the University of Torino (Torino, Italy), and the Center for Chinese Studies at the University of Hawaii.

Cross-Cutting Research Themes

UTEP expects to use the cross-cutting themes as a means to significantly impact the research priority areas described above and to build strong inter- and multidisciplinary research. Activities and research centers related to the themes in this section will promote cyber-enabled technologies and computational tools, integrate research and education across the campus, and create synergistic environments for conducting successful transformative and translational research, for and with our students.

Cross-Cutting Research Theme:

**Cyberinfrastructure and Collaborative Environments**

Creating innovative Cyberinfrastructure to cultivate education and research collaborations within and across disciplines.

The NSF workshop report, “History & Theory of Infrastructure: Lessons for New Scientific Cyberinfrastructures,” defines cyberinfrastructure (CI) as “the set of organizational practices, technical infrastructure and social norms that collectively provide the smooth operation of scientific work at a distance.” Technical infrastructure includes the foundational items—hardware (including high-performance computing), software, networks, sensors, software services, data and knowledge stores, ontologies, workflows, and the like that are needed for an organization or community to function. CI links people, tools, and information in ways that reduce the barriers of location, time, institution, and discipline, and it facilitates the establishment of collaborations in which members and resources are distributed by allowing each team member or group to contribute and share data and other resources. Centralized and distributed resources include such things as community-specific tools, applications, data, sensors, experimental operations,
and educational material. Other ways in which CI supports the community is by addressing the integration of heterogeneous and dispersed data and providing an infrastructure for data management and transfer.

With funding of over $6 million, the CyberShARE Center leads the effort for the “Cyberinfrastructure and Collaborative Environments” initiative at UTEP. The Center was created in 2007 to support a community of multidisciplinary researchers and educators at UTEP who share computing and data resources through CI. Through workshops, interdisciplinary research projects, and the development of ontologies and workflows, scientists, engineers, mathematicians, computer scientists, and educators have built strong and productive collaborations through the Center. Tools developed at the Center are being used to share data, algorithms, and processes with other scientists and engineers, as well as to educate and train next generation scientists and engineers who can use CI effectively. Support for visualization of scientific data is another important function of the CyberShARE, and the means for sharing and understanding data across disciplines. CyberShARE is a TeraGrid Campus Champion that provides access to high-performance computing and scientific visualization resources.

The Center’s interdisciplinary projects are focused currently on optimization of data streams and sensor arrays in ecological and environmental networks, determination of physical properties of the Earth through data integration and computational methods, and management of trust and uncertainty of scientific results. The Center plans to extend CI to support collaborative partnerships with the humanities, social sciences, and other disciplines.

Cross-Cutting Research Theme: Emerging Technologies: Information Technology, Biotechnology & Nanotechnology – Developing innovative methods and technologies to advance research in areas of regional, state, and national need.

Emerging technologies include those in: biomedical engineering; advanced manufacturing and rapid prototyping; device and sensor development and testing; associated developments in nanotechnology; development of new materials and materials processing, including catalysts and molecular substrates for medical developments and applications; and related computer science and engineering applications. All of these emerging technologies have a strong potential for contributing to building UTEP’s research capacity and attracting funding from both private and public sources.
Contributors include faculty from Computational Science, Computer Engineering, Computer Science, Industrial Engineering, Mathematics, Material Sciences and Engineering, Systems Engineering, Educational Technology, and other disciplines. The W.M. Keck Center for 3D Innovation, the Materials Research and Technology Institute (MRTI), the Center for Transportation Infrastructure Systems (CTIS), Regional Geospatial Center, and the NASA Center for Space for Space Exploration Technology all contribute to this area.

Cross-Cutting Research Theme: U.S. – Mexico and Latin America: Social and Behavioral Issues – Leading the nation in studies that require multidisciplinary expertise on Mexico and Latin America, multi-cultural communities, and language and cultural issues in border environments.

Building on the strength of its faculty and UTEP’s strategic location in the rapidly growing U.S.-Mexico border region, UTEP has developed a vibrant research environment that supports scholarship and creative activities focused on a wide range of topics especially salient in Hispanic communities and border regions—both along the U.S.-Mexico border and beyond:

- UTEP’s Center for Inter-American and Border Studies (CIBS) was one of the first academic research centers dedicated to the study of U.S.-Mexico border issues. CIBS has helped launch the important work of many UTEP researchers whose pioneering scholarship has strongly influenced social science disciplines and economic, legal and government policies on both sides of the border.

- UTEP anthropologists, sociologists, and political scientists have made major contributions to understanding social-economic and legal issues that are especially challenging to Hispanic populations and border communities.

- UTEP is the first University to offer a doctoral degree in U.S.-Mexico Borderlands History (with a focus on northern Mexico). Attracting both nationally recognized scholars who are experts in the history of the U.S.-Mexico border region, and highly competitive doctoral students, this program and the research associated with it have rapidly gained national visibility.

- University behavioral scientists, including faculty within our highly respected Legal Psychology doctoral program and the Institute for the Study of Judicial
Processes have brought further distinction to UTEP through their work focused on the experiences of Mexican Americans in the legal system, including such specific areas as, the accuracy of eyewitness identification in cross-cultural settings, the reliability of Spanish language translations of testimony and evidence presented in legal proceedings, the validity of information gained through interrogations, and the reliability of criminal confessions.

- UTEP faculty across the campus—in the College of Health Sciences, School of Nursing, and the Psychology, Anthropology, and Communications departments—have greatly enhanced understanding of the improved health and well-being of U.S.-Mexico border residents and the U.S. Hispanic population more generally by unraveling the factors that contribute to health disparities, especially those that reflect the complex interactions between health problems and diseases, cultural traditions and treatment regimens commonly used by health care providers. UTEP faculty are also engaged in highly competitive research in the neuroscience of substance abuse and addictions.

Goals, Objectives, and Strategies

Dedicated to the mission of providing the regional population educational access to excellent academic and research programs, UTEP has made extraordinary progress toward becoming a national research university serving a 21st century demographic. Institutional efforts to capitalize on strategic opportunities have augmented a campus climate that encourages faculty and student research, scholarship and creative activities in all departments and disciplines across the campus — business, engineering, health, physical, biological, computational, social and behavioral sciences; education; arts and humanities. UTEP’s tradition of approaching institutional development through well established partnerships with the El Paso community and students supported by a faculty committed to sustaining a vibrant intellectual and artistic environment where scholarship and creative activities are equally valued is reiterated in UTEP’s comprehensive Strategic Plan 2008-15. For the purpose of this more narrowly construed Strategic Plan for Research, the focus is more targeted toward funded research, and Table II-5 presents the goals, objectives and strategies designed to achieve the goals of increased research funding and productivity.
### Table II-5: Summary of Goals, Objectives, and Strategies to Increase Research Funding

**Goal 1: Build research and faculty capacity**

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Strategies</th>
<th>Measures</th>
</tr>
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<tbody>
<tr>
<td>Increase the number of tenured and tenure-track faculty from 508 to 720 by 2020</td>
<td>Develop a recruitment plan to ensure that priority research areas are reflected in hiring priorities</td>
<td>Faculty hires disaggregated by priority areas and areas of national and international visibility</td>
</tr>
<tr>
<td>Recruit high-quality faculty and graduate students</td>
<td>Offer competitive start-up packages</td>
<td></td>
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<tr>
<td></td>
<td>Develop a hiring plan for technical/professional research support staff to manage and maintain sophisticated research instrumentation</td>
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<td></td>
<td>Provide support to faculty in areas that are rated competitive in panel reviews</td>
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<td></td>
<td>Require additional proposal review for major institutional proposals</td>
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<td></td>
<td>Provide proposal development support to new research faculty and staff hires</td>
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<tr>
<td>Improve the success rate of proposals over $500,000 by 10% by 2015</td>
<td>Identify and become better acquainted with agencies that have traditionally not funded UTEP’s research projects</td>
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<tr>
<td></td>
<td>Build collaborative teams in priority areas</td>
<td></td>
</tr>
</tbody>
</table>
### Table II-5: Summary of Goals, Objectives, and Strategies to Increase Research Funding (cont.)

<table>
<thead>
<tr>
<th>Goal 2: Improve productivity and efficiency of research centers, in particular those that contribute to priority areas</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Increase the number of proposals submitted through research centers</strong></td>
</tr>
<tr>
<td><strong>Secure the credentials required for classified research</strong></td>
</tr>
<tr>
<td><strong>Provide additional training and review of proposals submitted</strong></td>
</tr>
<tr>
<td><strong>Trend analysis of submitted proposals by centers over five years</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Goal 3: Improve institutional infrastructure capacity to support growth</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Improve faculty productivity and efficiency in the post-award administration of sponsored projects</strong></td>
</tr>
<tr>
<td>Conduct periodic surveys to identify areas of improvement in post-award activity</td>
</tr>
<tr>
<td>Review of survey data</td>
</tr>
<tr>
<td><strong>Improve productivity and efficiency in managing funded projects</strong></td>
</tr>
<tr>
<td>Conduct periodic surveys to identify areas of improvement in grant management</td>
</tr>
<tr>
<td>Review of survey data</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Goal 4: Establish UTEP as the primary human and economic development catalyst for the region</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Increase commercialization of UTEP’s research and development</strong></td>
</tr>
<tr>
<td>Extend awareness of CREIE through meetings and workshop</td>
</tr>
<tr>
<td>Comparison against baseline data: Patents filed, technology transferred, and commercialization achieved</td>
</tr>
</tbody>
</table>
Allocation of Resources

The Center for Institutional Evaluation, Research, and Planning has developed a set of models projecting institutional growth and certain aspects of research and doctoral program development through the year 2020.

These models are based on continuation of our best practices and most successful outcomes of recent years, along with incremental gains in efficiencies and productivity. They show that our goals of becoming the first national research university serving a 21st century demographic are attainable within the decade. We will surpass the Texas Tier One benchmarks along the way. The data generated by the model serve as the basis for the financial projection model utilized to identify the resource requirements for the achievement of this plan.

Projections of Operating Costs

UTEP’s current year operating expense budget is approximately $354 million. Financial projections indicate that realization of institutional research and enrollment goals will require, in current dollars, an increase in annual operating budget expenditures to $550 million per year. Key assumptions utilized in this model include:

- Increasing faculty size from 508 to 720
- Increasing graduate student support from $4.4 million for 257 students to $15.9 million and 676 students
- Increasing research expenditures from $60 million to $100 million
- Addition of 1.8 million of net assignable square feet of space
- Enrollment growth to approximately 29,000 students

The primary drivers of expense growth are faculty salaries, graduate assistantships, and research expenses (e.g., research centers and equipment), as well as commensurate increases in Operation and Maintenance of Plant and Institutional Support. The listing below provides an indication of anticipated increases in major categories of operating costs:

- Instruction $57.6 million
- Academic Support $11.0 million
- Scholarships/Fellowships $32.7 million
- Research $67.2 million
Resource Development

The University’s financial projections indicate that while the resources required for realization of this plan are significant, based upon historical patterns and utilization of conservative growth assumptions, attainment is achievable. Current year operating revenues are projected at $355.4 million and financial modeling indicates total revenues should reach $558.6 million by approximately 2020, in current dollars. Revenue projections have been developed based on certain key assumptions:

- Enrollment increases of 3.4% per year
- Careful tuition management consistent with Regental direction
- State appropriation growth of 2% each biennium
- Sponsored program growth of 3-5% per year

Utilizing these growth assumptions, UTEP should be able to generate the resources needed to finance increase in expenditures required to reach our goals as a national research university. The primary revenue stream increases that will support this growth are as follows:

- Financial and Administrative Cost Recovery $ 10.3 million
- Tuition and Fees $117.8 million
- State Appropriations $ 20.9 million
- Sponsored Programs/Gifts $ 51.6 million
- Financial Aid $ 13.2 million

Faculty Start Up and Retention Packages

A critical priority for the University is the retention of key faculty and recruitment of faculty in strategic areas that will advance the research enterprise. UTEP has been successful in recruiting nationally recognized faculty and continued success will require increasingly competitive start-up packages. The STARS program funded by The University of Texas System Board of Regents has been critical to
UTEP’s success in faculty recruitment and retention efforts. These funds have been enhanced, as needed, from UT System allocations of LERR monies, Research Development Funds, Higher Education Incentive Fund allocations and institutional funds. It is estimated that the ongoing start-up costs will at least double over the decade from about $4 million to $8 million per year. Additionally, it is anticipated that occasional start-up packages for key strategic hires may require resources in excess of that amount.

Student Participation

UTEP distinguishes itself from other universities in its success in developing a strong undergraduate research program in many departments across the campus, and especially in the Colleges of Science and Engineering.

Students are actively involved in research groups with support from NSF (Research Experiences for Undergraduates-REU, Louis Stokes Alliance for Minority Participation-LSAMP programs, and Bridges to the Doctorate) and NIH (Research Initiative for Scientific Enhancement-RISE and Minority Access to Research Careers-MARC programs) as well as other sources of funding. In addition, the Affinity Research Group model developed at UTEP (http://research.utep.edu/), provides a framework and pedagogy that enable faculty to create and sustain a cooperative environment that explicitly develops skills needed for students to become successful in research, academe, and the workforce. Undergraduate students are competitively selected to participate in these programs and conduct research under the mentorship of experienced faculty and graduate students.

In Fiscal Year 2009, 791 undergraduate students worked in settings funded by sponsored projects, and 610 undergraduate students received stipend support from research/training grants. In the same year, 350 students (99 doctoral and 251 Master’s) were supported through grant funds, corresponding to 23.5% and 10.0 % of the doctoral and Master’s level student enrollment, respectively. Current support for doctoral-student stipends comes primarily (52%) from State funds, 33% from grants, and 15% from scholarships and fellowships (see Figure VI-3).

It is anticipated that grant funding and fellowship awards will become an increasingly important source of support for student research participation at UTEP. With an emphasis on increasing research funding, it is expected that the number of research assistant appointments that can be offered to students will also grow as described later in the “Student Development” section (Section V). A major initiative is being undertaken to take a proactive approach to seeking
increased funding opportunities that support the participation of cohorts of students in research, e.g., programs such as the NSF Integrative Graduate Education and Research Traineeship (IGERT) program and the Department of Education Graduate Assistance in Areas of National Need (GANN) program. For single application fellowships, the ORSP, in coordination with doctoral program directors and the Dean of Graduate School, will develop a program to mentor students in the preparation of applications for these and other highly competitive fellowships.

The “Other Resources” section of the plan describes the projected shift in funding sources for doctoral students (Section VI). As UTEP continues to build capacity in research and doctoral education, the proportion of the doctoral student support budget that will be generated through grants is expected to increase steadily, reaching nearly 50% by 2020. Similarly, UTEP’s major fundraising campaign being conducted in association with the celebration of the University’s Centennial in 2014 has placed a high priority on seeking major donor support for graduate student fellowships. During the past year, incented by the TRIP provision in HB 51, donors to UTEP have already designated more than $5 million in endowment funds for doctoral student fellowships. With this new source of support, it is expected that the annual funding generated for doctoral student fellowships will increase from $674,000 today to at least $2.25 million per year by 2020.
Section III: Plan to Improve Undergraduate Education

UTEP’s road to becoming a national research university is a continuation of the University’s long commitment to, and dramatic progress toward PreK-16 educational excellence in the El Paso region.

The starting point on this road is the deeply-held belief that this region’s students deserve the same opportunities for personal and professional growth as those taken for granted in affluent communities. And given UTEP’s belief that intellectual talent is everywhere, UTEP can and must create opportunities for that talent to be developed. UTEP is the university that early on recognized that in order to enrich educational opportunities for the region’s students, the entire community would need to come together to support and improve PreK-12 preparation. At the same time, UTEP redoubled efforts to provide ever-growing numbers of our region’s students an opportunity for a high quality undergraduate experience that opens the world to them and enables them to compete with peers across the nation and the globe. This commitment to competitive undergraduate education is critical, not only to the people whose lives have been forever changed by the opportunities UTEP provides, but also to the future economic development and quality of life in El Paso and the surrounding region, from which more than 80% of UTEP’s students come.

UTEP is creating the template for how to build a college-going culture with a strong PreK-16 partnership where students traditionally underrepresented in higher education find a home that recognizes their inherent talents, nourishes their
dreams and aspirations, and puts them on the pathway to becoming vital contributors to the 21st century world. UTEP’s success in embracing the opportunity of providing excellent education to all its region’s students has led to the development of models that universities across the state and nation can implement toward providing Latino students access, excellence, and success in their undergraduate studies.

Closing the Gaps in Participation

Access

In the El Paso region, UTEP’s focus on participation and access has been both challenging and critically important, particularly because

- more than 55% of the Fall 2009 freshmen class self-reported that they are the first generation in their families to pursue a college degree; and

- only 18.9% of persons 25 and older in El Paso County have a bachelor’s degree or higher (compared to 25.1% in Texas and 27.4% nationally).

At UTEP, access is viewed as having four main components, each essential for ensuring that all students have the opportunity to enter higher education (see Figure III-1).

**Figure III-1: Components of Access at UTEP**
The first two levels of access, Aspirational and Academic Access, are linked such that a college-going culture promoting the real possibility of higher education is supported by programming to strengthen the K-12 academic program, building the academic rigor necessary for success. Once students believe that college is within their reach, and once they have developed the academic capacity for higher studies, Financial Access must be provided in order for those students, whose personal and family finances are very limited, to continue on the pathway to postsecondary education. Absent access to scholarships, grants, loans, affordable tuition and fees, as well as opportunities for on-campus employment, low-income students’ dreams of college and preparation for success will end. As the primary four-year public university serving this most economically challenged and under-educated community, UTEP is acutely conscious of our responsibility to provide the highest quality education at an affordable cost.

As the primary four-year public university serving this most economically challenged and under-educated community, UTEP is acutely conscious of the responsibility to provide the highest quality education at an affordable cost.

Students must also be afforded Participatory Access, that is, the full range of academic support and delivery systems that recognize that the majority of UTEP students are adults with a wide set of demands in their lives, including full-time employment, families and children, and limited time and resources. These systems include evening and weekend classes, on-line opportunities, classes provided in settings across the community, as well as labs and other supports for students whose life circumstances occasionally impede academic progress. UTEP’s view is that ensuring access goes well beyond the traditional definition of initial entrance to the University, and must include sustained attention to ensure that students progress through their degree programs to graduation.
Student Enrollments and Student Profile

UTEP’s success in promoting all levels of access contributed to a record 2009 enrollment of more than 21,000 students, and the largest year-to-year increases, both fall and spring, that have occurred in recent years. This increase means that more of the Paso del Norte region’s young people are opting to pursue higher education and that most of them are bringing their higher education dreams and aspirations to UTEP.
UTEP’s effort to recruit the most academically competitive students from regional schools has resulted in a record number of Top Ten Percent El Paso area high school graduates choosing to enroll at UTEP. Last year, 60% of the region’s Top Ten Percent high school graduates who elected to attend a public university in Texas came to UTEP, and they comprised nearly one-fifth of the fall 2009 incoming freshman class. This is an extraordinary validation of UTEP by this region’s most accomplished high school graduates, who via House Bill 588 are guaranteed admission to all state-funded universities. These students had a choice and they chose UTEP. An additional 23% of UTEP’s fall 2009 class graduated in the top quartile of their high school classes. Thus, 42% of UTEP’s first-time freshmen graduated in the top 25% of their high school class.

Of the 9,833 graduates of all high schools in El Paso County in 2008, some 5,590 started college immediately, either in El Paso or elsewhere, and 3,146 (56%) of those chose UTEP. There are two important stories behind these statistics.

- First, a large number of students – more than 4,000 – in the El Paso region did not attend college or university immediately after high school. UTEP
and its close partner, the El Paso Community College (EPCC), have a continuing challenge to reach out to the region’s young people and their parents to ensure that all students are fully aware of the higher education opportunities available to them.

- Second, UTEP is the university of first choice for a majority of area students who choose higher education immediately after high school graduation.

In fall 2009, there was a large increase—18%—in new transfer students at UTEP and, not surprisingly, most of them came from the El Paso Community College. UTEP has developed exceptional ties with EPCC through our longstanding participation in a variety of joint efforts. More than 75% of students at UTEP have taken one or more courses at El Paso Community College, and all efforts to recruit the best regional students to the University must clearly include collaboration with our partners at EPCC.

It is important to emphasize here that UTEP’s goal is not to transform the profile of our entering students to make them look more like their more affluent peers in other university settings. We highly value our students’ talents and life experiences and the diverse perspectives that they bring to U.S. higher education. Moreover, extensive research on UTEP’s students has taught us that the traditional metrics most frequently used to characterize the quality of entering university classes, e.g., SAT and ACT scores, have little predictive value and are not meaningful indicators of potential for student success at UTEP. Although there continues to be tremendous pressure—including in the Texas Tier One process—to impose such metrics in settings where they are clearly a poor fit, UTEP will continue to resist it, working hard to ensure that talent is not discouraged or squandered in the name of status metrics. Instead, UTEP will use its extensive institutional research and its partnerships with EPCC and area school districts to enhance the pre-college preparation of all students and to provide students from the region and beyond an opportunity to attend and succeed at the University.
Improving the Academic Preparation of Entering Students

UTEP understands that its responsibility for raising the educational attainment level of the El Paso region begins long before students attend their first classes on campus. UTEP faculty and staff have long embraced that responsibility and worked closely with administrators, teachers, and students throughout the PreK-12 system in the region to develop an atmosphere where students who may not see themselves headed toward higher education, now look ahead to that not only as a possible, but an attainable goal. Extending the belief that college is within the grasp of area students is a key first step in UTEP’s strategy to raise the educational level of the surrounding region, and to contribute to Texas achieving the THECB’s Closing the Gaps participation goal. The critical next step that UTEP has added to its strategy is its work with area stakeholders to strengthen the capacity of K-12 institutions to provide academically rigorous programs ensuring that students have the solid academic foundation enabling them to succeed in higher education. UTEP has created, or takes part in, an interlocking set of PreK-16 and community initiatives all aimed at significantly improving the ability of teachers to teach, and of students to learn, content at a level necessary for solid college preparation. This set of approaches to improving the preparation of all students for college in the El Paso area has been so successful that they are held up as models for other universities in Texas and across the U.S.

El Paso Collaborative for Academic Excellence

In 1991, acknowledging the “closed educational loop” in El Paso, where more than 80% of UTEP’s students are graduates of high schools in El Paso County and more than 70% of the teachers in area schools hold degrees from UTEP, the University spearheaded the formation of the El Paso Collaborative for Academic Excellence. The Collaborative is driven by the belief that all children, regardless of
race or ethnicity, the school they attend, or the neighborhood in which they live, are entitled to a first-rate education, to educators who believe in them, and to a real chance to learn challenging content.

At the outset, the Collaborative set forth three primary goals that still drive its agenda and work:

1. to ensure academic success among all youngsters in the region—from their first year in school through university;
2. to ensure that all students graduate from area high schools prepared to enter and succeed in a four-year college or university; and
3. to reduce the academic achievement gap across ethnic and racial groups.

In order to do that, the Collaborative brought together the city’s top education, civic, and business leaders to work together to set higher expectations for all stakeholders: children, teachers, principals, schools, parents, post-secondary educators, business and community groups. More importantly, the Collaborative implemented a robust action agenda aimed at supporting all educators in delivering a rigorous, high quality education to all students. As Figure III-3 reveals, the El Paso region today outperforms other Texas metropolitan areas in the percentage of high school graduates who complete the Recommended Curriculum or Distinguished Achievement Program.
After nearly 20 years of sustained commitment to systemic improvement of teaching and learning in the region and to the PreK-16 alignment of instruction to prepare all students for college, the Collaborative continues to work with educators in the community at all levels and to anticipate and respond to new priorities. The Collaborative did just that when in 2005 it developed an Algebra II End of Course exam to provide teachers and students better information about their readiness for college mathematics. The large number of area high schools that have utilized the exam since then are better prepared for the approaching arrival of the state’s end-of-course exams. Efforts such as this one, as well as continuous professional development provided by the Collaborative to area
middle and high school mathematics and science teachers, help enable students to seamlessly, efficiently, and successfully progress from high school to college-level content. The Collaborative has been an extraordinarily successful vehicle for securing national funding – over $55 million from NSF alone – to support programming and research into the support policies, practices and systems that make students, schools, and colleges successful.

Building on the success of the Collaborative, UTEP was one of 11 institutions in the nation selected by the Carnegie Cooperation for their major Teachers for a New Era (TNE) project. In the El Paso region, more than 90% of newly certified teachers are UTEP graduates, thus giving the University a special stake in teacher preparation. TNE provided a 5-year (2005-2010) $5 million grant to support concerted efforts to engage arts and science faculty in the preparation of teachers, uplift the clinical practice of teaching through close cooperation between UTEP and area schools, and make evidence-driven teacher preparation decisions.

College Readiness Initiative
The El Paso Area College Readiness Initiative is another key element in UTEP’s strategy toward increasing student participation in higher education through enhanced pre-college preparation. This initiative began in 2006 with an initial charge to move college placement assessment to the high schools and has been successful at reaching that goal. All thirteen regional school districts now make college placement testing a priority for all junior or senior high school students. Those students who do not demonstrate college readiness are provided access to remediation while in high school and prior to matriculation at either the community college or university. This downward shift of responsibility for college readiness to the high schools has contributed to a significant reduction in the number of students who enroll in developmental courses at the University and greatly increased the number of students who are able to enroll directly in college-level coursework (Figure III-4).
The current priority of the College Readiness Initiative is compiling and distributing information regarding the many ways high school students have access to college-level coursework. Among the many points of entry into higher education are dual credit, early college high schools, Advanced Placement, and credit by exam opportunities, yet many area students are not taking full advantage of these options. The College Readiness Initiative is working to provide accurate, complete, and easily accessible information to regional stakeholders so as to increase the number of students capitalizing on these early opportunities to enter higher education. Such opportunities are particularly
important to talented low-income students who cannot afford to waste either time or money in the pursuit of their educational goals.

Admissions

The next stage in enhancing student opportunities for personal and professional success at UTEP involves another set of strategic initiatives that have been, and continue to be, developed and refined. Meaningful access to college requires that UTEP carefully identify those factors associated with success at UTEP. Determining which students are candidates for success at UTEP requires far more than simply examining applicant test scores and class rank.

First-Time Students

For many years, researchers and educators have questioned the validity of the SAT in predicting future college performance. The National Center for Fair and Open Testing has noted that colleges and universities around the country that have dropped their test score requirements, have “confirmed what the research has shown all along - the SAT I has little value in predicting future college performance … according to research done by the tests’ manufacturers, class rank and/or high school grades are still both better predictors of college performance than the SAT I.”

Given, too, that recent SAT results show a widening gap between the SAT performances of White and Asian-American students and African-American and Hispanic students, UTEP knew that its approach to admission needed to be more nuanced and thoughtful.

Through its Lumina-funded Student Success Project, UTEP has studied predictors of re-enrollment, departure, and graduation among its own student population to more accurately determine appropriate indicators of success and departure. The Student Success Project identified the following characteristics as predictors of graduation at UTEP (see Figure III-5):

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7 Calculated by FairTest from: College Board, College-Bound Seniors 2009: Total Group Profile Report and College-Bound Seniors 2008: Total Group Profile Report
As is clear, SAT and ACT scores are NOT predictors of ultimate success at UTEP. Utilizing such scores or high school rank alone as the basis for admitting or excluding students from UTEP would erect barriers to higher education for students who, as the data shows, have the ability to succeed. More importantly, the use of such metrics would deny students with academic potential the opportunity not only to improve their own lives, but to strengthen the region, state and nation.

Over the past five years, for example, UTEP awarded 5,701 degrees to first-time students. A retrospective analysis of those graduates’ academic histories reveals that if traditional SAT (1000) and class rank (upper 50%) restrictions had been applied to admissions, the outcomes would have been quite different: 2,689 of these graduates (2,365 Hispanic) would have been denied admission. We highly value our students’ talents and life experiences and the diverse perspectives that they bring to U.S. higher education. Moreover, 549 graduates, (454 Hispanic), would have been denied admission. The difference in

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**Figure III-5: UTEP Student Success Factors**

<table>
<thead>
<tr>
<th>NOT Predictors of Graduation at UTEP</th>
<th>STRONG Predictors of Graduation at UTEP</th>
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</thead>
<tbody>
<tr>
<td>SAT/ACT scores</td>
<td>Better high school grades</td>
</tr>
<tr>
<td>Gender</td>
<td>Fewer work commitments outside school</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>Higher mathematics placement level</td>
</tr>
<tr>
<td>Household income</td>
<td>Fewer early course failures</td>
</tr>
<tr>
<td>Parental education level</td>
<td>Less stopping out</td>
</tr>
</tbody>
</table>

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SAT and ACT scores are NOT predictors of ultimate success at UTEP. Utilizing such scores alone as the basis for admitting or excluding students from UTEP would erect barriers to higher education for students who have the ability to succeed.

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8 For information on the project and presentations about the Lumina work please see: http://irp.utep.edu/Default.aspx?tabid=46602
outcomes for both the individuals and society would be truly staggering: a total of 2,856 graduates over the last five years would not have attained that goal if UTEP imposed the 1000 SAT minimum and upper-half class rank restrictions on their admissions. Not only did many of these students excel academically at UTEP, the projected increase in their lifetime earnings amounts to more than $2 billion.
Finally, research on UTEP students shows that SAT scores systematically underestimate their ability to execute higher-order analyses, problem-solving, and critical-thinking assignments – the very attributes that employers and educators agree should be our highest priority. UTEP’s Collegiate Learning Assessment (CLA) results reveal that when UTEP’s CLA scores are analyzed to show how UTEP students should perform as predicted by their SAT scores, UTEP freshmen and seniors rank in the top four among all institutions nationwide (see Figure III-6). As is clear, UTEP students significantly outperform the SAT predictions of how they should perform. The more sophisticated CLA analysis of student ability gets to the talents and skills that may be hidden by more traditional forms of student assessment. Results confirm that UTEP contributes more to the learning gains made by students than 68% of the 176 four-year undergraduate institutions participating in the 2007 – 2008 national CLA and that UTEP freshmen and seniors performed ‘Well Above’ or ‘Above’ on every task measured by the CLA.

![Figure III-6: UTEP 2007 CLA Scores Compared to Prediction](image-url)

**Based on SAT Scores**

Key: ■ indicates UTEP.
Transfer Students

UTEP’s partnership with EPCC is recognized as one of the most productive such relationships in Texas and nationally. A recent Title V grant created the technological bridge that now connects the student information systems of both campuses, providing another link in the seamless movement of students between the two institutions. An articulation MOU, an EPCC-UTEP Articulation committee, a UTEP transfer center at EPCC campuses, transfer guides, and a Transfer Orientation program promote seamless transfer, remove barriers to all levels of access, and facilitate, rather than complicate transfer and create an environment of efficient progress to the baccalaureate degree.

Closing the Gaps in Success

Transition into the University

Once new students arrive at UTEP, an integrated web of programs eases their transition to the undergraduate experience. This web of programs has been designed to ensure that students with a wide range of needs are provided with supports at each critical juncture to ensure progress and success in the crucial first year, and ultimately leading to graduation. That experience begins with Enhanced New Student Orientation (ENSO). One of the features of ENSO is specifically designed to support students in enrolling in college-level, rather than developmental courses. For students who do not place into college-level math prior to ENSO, a six hour math refresher is provided, as well as an opportunity to retake the math placement exam. As a result of these ENSO math workshops, fully 50% of students place at least one math course higher. For those whose placement does not improve, UTEP offers another opportunity to improve math skills and place into college-level math through a program called Mastering Developmental Math (MDM). MDM invites students into an online mastery-based program driven by in-person tutorial
support and tracking of students’ participation. The success of these two strategic refresher efforts has made a significant difference in enabling new UTEP students to get off to the best start on their progress toward a degree. As additional initiatives are developed, more UTEP students are being provided pathways to successful college-level matriculation during their first semester.

UTEP’s Entering Student Program (ESP), which was recognized with a 2003 THECB Star Award and as a 2006 Finalist in the national Examples of Excelencia competition, provides a robust structure for supporting freshmen in their first semester at UTEP. A large number of universities and colleges, from across Texas to as far away as Tamagawa University in Tokyo, Japan, have visited UTEP to learn about how the ESP has created learning communities, brought together faculty across disciplines, and established learning objectives that mirror nationally recognized essential skills required to meet 21st century challenges. A common textbook, Borders: Crossing into Your Future, has been developed by UTEP faculty for the University first-year seminar class. Data from the UTEP Entering Students Program for Fall 1999 to Fall 2007 show consistently higher one-year retention rates for first-time freshmen who took UNIV 1301 in their entry term or second term at UTEP when compared to first-time freshmen who never took UNIV 1301 or had to repeat UNIV 1301 in the following spring or summer term.

The ESP is also designing online as well as new freshmen and transfer seminar courses that specifically address the needs of adult re-entry students. Topics such as study skills for successful online students and time management skills specifically designed for working adults and those with family responsibilities are incorporated into the courses.

Accelerating Progress to Degree

As part of its efforts to ensure student success, UTEP has worked intensively to identify conditions that accelerate student progress toward degree completion. The lynchpins of UTEP’s efforts are (1) curriculum review and academic advising redesign, (2) support for transfer students, and (3) early college high schools.

- **Curriculum review and renewal** resulted in a return to 120-hour degree programs in nearly all undergraduate degrees, and the 120-hour degree plans are now the basis for the EPCC-UTEP Articulation Committee’s work to fully articulate EPCC and UTEP degrees and provide area students with the most efficient pathway to baccalaureate completion. **Academic**
advising redesign has integrated career and financial counseling, clear and up-to-date information regarding degree plans, tuition and fees, course sequencing, scholarships, financial aid, and internship opportunities, all of which are now established and successful features of the UTEP undergraduate experience.

- **Transfer student support.** As a result of several UTEP initiatives, each semester UTEP sends to EPCC the names of students who have completed the EPCC and UTEP requirements to earn an Associate’s degree from EPCC. In May 2009, 344 students received AA degrees at EPCC, many earning that first family college degree that is so important to reinforcing aspirations. Thanks to generous donors, the UTEP-EPCC Transfer Scholarship Program has enabled 300 talented EPCC students to pursue an undergraduate degree at UTEP. Scholarship recipients have achieved an outstanding 95 percent success rate, leading to the program being honored with one of the 2008 THECB STAR Awards.

- **Early College High Schools (ECHS)** are dramatically accelerating student progress through UTEP. These schools, developed by El Paso Community College in partnership with local Independent School Districts, have already received considerable statewide and national recognition and foundation funding. The ECHS program is specifically designed to provide students traditionally underrepresented in higher education a tuition-free pathway to earn an associate’s degree by blending high school and college in an academically rigorous yet supportive environment. From the outset EPCC invited UTEP to collaborate in planning for the eventual transfer of this new group of students to the University.

The first group of ECHS students—twenty-three students from Mission Early College High School—graduated in May 2009 with their associate’s degree from El Paso Community College (at the end of their junior year of high school) and entered UTEP as university juniors in fall 2009. An additional 42 Mission students completed their EPCC associate’s degree in December 2009 and entered UTEP in
spring 2010. These students were able to enter UTEP as full juniors while concurrently enrolled in their senior year of high school. All 65 students chose to attend UTEP upon completion of their EPCC Associate’s degrees. These accelerated students are being mentored to develop their plans for graduate and professional school during their junior year. They are typically 17-19 years of age, are overwhelmingly Hispanic, many from low-income families, with many declaring an interest in majoring in STEM fields. There are currently four ECHS campuses enrolling students in the El Paso area with two more scheduled to open over the next two years for a combined total of up to 600 graduates each year. UTEP is working with each school district and the El Paso Community College to be the University of choice for these students.

The cumulative impact of UTEP’s coordinated and interlocking efforts to accelerate progress to degree is significant. UTEP’s first–year retention rates are increasing, as is the number of degrees awarded annually (see Figure I-6). As more UTEP students report enhanced engagement in learning and satisfaction with their undergraduate experiences, these rates are expected to continue to improve.
Degree Completion

During the past year UTEP students earned a total of 3,838 bachelors’, masters’, and doctoral degrees, an 8.8% increase over the previous year. The increase in undergraduate degrees awarded is largely due to increases in the pipeline of students reaching the senior year and the efficiency in graduating those seniors. This increase is not an isolated phenomenon. Consider the accumulated growth in enrollment and baccalaureate degrees awarded over the last five years (see Figure III-7). From 2004 to 2009, the total undergraduate degrees awarded increased by 71% while enrollment grew by only 13% during the same period. Importantly, there was a steady increase in the number of degrees awarded each year without isolated spikes attributable to unique circumstances.

Figure III-7: Accumulated Growth in Undergraduate Enrollment and Degrees Awarded from 2003-04 through 2008-09

Accumulated Growth from Base Year 2003-04

- 2003-04: 3%
- 2004-05: 12%
- 2005-06: 20%
- 2006-07: 36%
- 2007-08: 57%
- 2008-09: 71%

Undergraduate Enrollment (Orange) and Undergraduate Degrees Awarded (Blue)
Closing the Gaps in Excellence

Academic Enrichment Opportunities

A key companion goal to UTEP’s efforts to broaden access to, and completion of, university study is the effort to provide students enrichment opportunities that are among the hallmarks of a top-quality collegiate experience, whether it be at a small liberal arts college or at a large research university. Such programs provide students opportunities to learn, among other things, about the world beyond familiar environments and about ways of living and environments that range from different to totally foreign. Enrichment programs are the norm at traditional universities, and are often taken for granted by affluent undergraduates. UTEP has worked hard to reinvent undergraduate educational excellence to create access to those sorts of experiences for students at UTEP, many of whom have had few opportunities to travel in the U.S. or internationally and to better understand their own lives within the context of very different ways of living. A case in point is a recent NSF-funded project which took UTEP undergraduate and graduate students, as well as faculty members, to Antarctica on a research expedition.

UTEP approaches Honors programming as it does all other aspects of its undergraduate education – with an eye to serving the current and future needs of its constituents while providing national level benchmarked excellence. More than 60 percent of El Paso County’s Top Ten Percent high school graduates who enroll in Texas public universities now choose UTEP, this number is steadily rising, and the majority remain in the El Paso area, establish businesses, work in industry or social service sectors and raise their families. It is essential, therefore, that this growing number of high-achieving students has the opportunity to participate in a UTEP honors program that challenges and expands their academic and intellectual capabilities and reflects the distinctive nature of this area’s culture and community. It is likewise essential that we seek out hidden talents at UTEP and in the broader community—the students with untapped potential for whom UTEP’s goals of excellence and access are so crucial, who are capable of excelling but would be overlooked in more traditional honors programs. UTEP’s honor program instills in its students the sense that education extends
We have no choice but to re-invent undergraduate educational excellence to create access to that excellence for those who historically have been shut out.

Nationally, Hispanic college students study abroad at about 50% the rate of non-Hispanic students. At UTEP, because this has been prioritized, applications to Study Abroad opportunities, from fall 2009 to spring 2010, have increased by 20%. Efforts are underway to expand the number of UTEP faculty-led international experiences and increase the number of exchange students who choose El Paso as their study abroad experience.

Because of our students’ deep ties to the community, UTEP has also worked to enhance student learning by creating opportunities for community-based service learning. UTEP’s Center for Civic Engagement (CCE) has worked to engage thousands of students and hundreds of faculty members in participating in community improvement efforts across the region. This opportunity has been particularly important to UTEP students, whose work and other responsibilities often make it difficult to do volunteer work. Via the CCE program, UTEP students can participate in these valuable service learning experiences because they are integrated into their academic program. UTEP is currently working to create a joint Civic Engagement initiative with the El Paso Community College and area partners to provide a seamless venue for area students to engage in service
The normal expectations of students in more affluent settings have historically been out of reach for many of UTEP’s students. Recognizing that UTEP’s students have every right to expect the same kind of educational excellence and that UTEP has a responsibility to provide it, we have been highly creative in re-conceptualizing and re-inventing such experiences as study abroad and civic engagement to ensure that our students’ time and financial resource constraints do not prevent them from participating.

Success after Graduation

UTEP’s commitment to its undergraduate students does not end at baccalaureate graduation. The global economy of the 21st century increasingly requires graduate and professional qualifications and experiences. In addition to offering a wider range of graduate and professional programs, UTEP has also created pathways to help prepare students who wish to attend law school or medical school. The Law School Preparation Institute and the Medical Professions Institute have achieved national recognition for their success in placing UTEP graduates (see Figure III-8).

The most important measures of success come from an institution’s own graduates. UTEP’s 2008-09 Graduating Seniors Survey showed that 59% plan to attend graduate school; and 28% plan to re-enroll at UTEP. Those statistics are an extraordinary validation of the increase in aspiration that can be attained by a
university committed to setting high standards of excellence for all of its students, and supporting them to reach those standards.

Figure III-8: UTEP Pre-Professional Programs in Law and the Medical Professions

Law School Preparation Institute
- Over the last decade, 216 UTEP graduates have entered law schools – 84% are Hispanic
- Over 60% have gone to First Tier Schools

Medical Professions Institute
- average 25 graduates per year – 60% Hispanic
- #2 producer of Mexican-American applicants to U.S. medical schools

As further evidence of the impact of the University, UTEP’s 2008 – 2009 Survey of Recent Alumni showed that:

- 95% of respondents who entered a post-baccalaureate degree program reported that their undergraduate experience prepared them adequately, more than adequately, or very well for their further education, and
- 89.2% reported their UTEP undergraduate experience prepared them adequately, more than adequately, or very well for their current occupation.
Conclusion

Over twenty years ago, The University of Texas at El Paso committed itself to provide the very best education to all students and put into place a coordinated, interconnected set of strategies—a system of excellence—to make that commitment a reality.

As a result, UTEP has dramatically increased the number of university undergraduates in the El Paso area, and those graduates have gone on to success in places as varied as El Paso area schools, the presidencies of the American and National Medical Associations, and the International Space Station. UTEP’s success in providing opportunity to a traditionally underserved community demonstrates without question that access and excellence can, and indeed must, be pursued together. By completing our progression to become the first national research university serving a 21st century demographic and by doing so with and for, not in spite of our undergraduate students, UTEP will continue to serve as a model for Texas and for the rest of the country.
Table III-1: Summary of Goals, Objectives & Strategies to Improve Undergraduate Education

| Goals 1: Reach and exceed the State’s Closing the Gaps measures for Participation |
|-----------------------------|-----------------------------|-----------------------------|
| **Objectives** | **Strategies** | **Measures** |
| Increase area high school students enrollment as first-time, full time freshmen | Partner with K-12 and EPCC to leverage College Readiness resources; recruit, prepare, and retain well qualified educators for K-12 | 2.5% minimum enrollment increase yearly in new first-time full-time freshmen |
| Increase area transfer student enrollment | Develop coordinated community outreach programs at sites such as Ft. Bliss and El Paso Community College Campuses | Enroll 75% of eligible Early College High School students |
| | Increase grants and scholarships to cover tuition, fees, and books for students with financial need | Increase on-line and hybrid course student enrollment |
### Table III-1: Summary of Goals, Objectives & Strategies to Improve Undergraduate Education (cont.)

#### Goal 2: Reach and exceed the State’s Closing the Gaps measures for Success

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Strategies</th>
<th>Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify new target populations of adult re-entry students and build programs specifically to meet their needs</td>
<td>Focus efforts on increasing graduates in STEM and other critical fields</td>
<td>Re-examine and improve the Closing the Gaps target to increase the numbers of undergraduate degrees awarded by 50% by 2020</td>
</tr>
<tr>
<td>Create a variety of pathways for students to enter the university at college-level standards</td>
<td>Expansion of scholarship, grant, and on-campus work opportunities to reduce outside work necessary for students</td>
<td>Increase the numbers of graduates in STEM and high-demand fields by at least the targets set for all University degrees</td>
</tr>
<tr>
<td>Work with university support programs such as academic and career advising to provide targeted advising to meet specific needs of specific populations and expand toward 24/7 access of key resources</td>
<td>Increase the number of online, weekend and evening courses</td>
<td></td>
</tr>
</tbody>
</table>

#### Goal 3: Reach and exceed the State’s Closing the Gaps measures for Excellence

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Strategies</th>
<th>Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify national standards of excellence for key programs</td>
<td>Work with research associates across campus to develop evaluation and assessment plans for key programs</td>
<td>Increase the numbers of students participating in academic enrichment programs, internships, and undergraduate research</td>
</tr>
<tr>
<td>Create assessment and evaluation standards</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monitor and adjust programming as necessary to reflect research results</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
In the late 1980s, The University of Texas at El Paso began an institutional transformation. It changed from a university whose demographics looked little like the region in which it was situated, to one of the nation’s leading Hispanic-Serving Institutions.

It changed from a university - whose mission was to emulate something it was not ("Harvard on the Border") to something only it could create – the first national research university serving a 21st century demographic. It is a research and graduate university that continues its commitment to undergraduate education and to students who, in many cases, are the first in their families to go to college. UTEP is now the only Mexican-American majority research institution in the United States, and one of the state’s leaders in federally-funded research and doctoral program development.

The institution extended its predominately undergraduate mission to provide both greater access and excellence to graduate students in general and to doctoral students specifically. That extension was of critical importance to the residents of the region that UTEP primarily serves, i.e., far west Texas, northern Mexico, and the U.S. southwestern borderlands. Addition of doctoral programs, and the newly recruited faculty responsible for them, has also been an essential complement to the growth of UTEP’s research agenda. Both graduate education and research are thus strategic directions that UTEP has taken in order to more effectively serve its student body, not in spite of it.
No state has been more aware than Texas of the rapid growth of the Hispanic population of our country – hence its almost decade-long higher education public policy commitment to “Closing the Gaps.” The gaps in Hispanic student participation and success cannot be closed in institutions of overwhelmingly Anglo-majority undergraduates, Anglo-majority faculty and international graduate students. There are decades of data and shelves of reports that all indicate how critical it is to grow the Hispanic professoriate of the 21st century. Where are those Hispanic professors coming from today? Where do they get their baccalaureate degree foundation? Table IV-1 shows that they start either at Hispanic-Serving Institutions or at very large flagship research universities. UTEP ranks 6th nationally, and is proud of that ranking. However, what should be of concern to Texas and to the U.S. as a whole is that it only takes 19 Hispanic baccalaureate graduates in a year who go on to complete their doctorate to become 6th. Neither Texas nor the U.S. can settle for this approach, if we expect to be competitive in the 21st century. We have to recognize a unique responsibility for an institution like UTEP which graduates more than 2,300 Hispanic baccalaureates each year. We have to retain more of the top talent here and move these students seamlessly into doctoral programs, and that means we have to grow our doctoral program capacity substantially over the next decade – more students in the programs we have and more programs where we can build critical mass in research-active faculty.
<table>
<thead>
<tr>
<th>University</th>
<th>Hispanic Baccalaureates who Completed a Doctorate</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of PR Rio Piedras Campus</td>
<td>86</td>
<td>1</td>
</tr>
<tr>
<td>University of PR Mayaguez Campus</td>
<td>66</td>
<td>2</td>
</tr>
<tr>
<td>University of Texas at Austin</td>
<td>33</td>
<td>3</td>
</tr>
<tr>
<td>University of California at Berkeley</td>
<td>32</td>
<td>4</td>
</tr>
<tr>
<td>University of California Los Angeles</td>
<td>31</td>
<td>5</td>
</tr>
<tr>
<td>The University of Texas at El Paso</td>
<td>19</td>
<td>6</td>
</tr>
<tr>
<td>Florida International University</td>
<td>18</td>
<td>7</td>
</tr>
<tr>
<td>Texas A&amp;M University, Main Campus</td>
<td>16</td>
<td>8</td>
</tr>
<tr>
<td>University of Florida</td>
<td>16</td>
<td>8</td>
</tr>
<tr>
<td>University of Arizona</td>
<td>14</td>
<td>10</td>
</tr>
<tr>
<td>University of California San Diego</td>
<td>14</td>
<td>10</td>
</tr>
</tbody>
</table>

Source: National Science Foundation, *Survey of Earned Doctorates/Doctorate Records File*
Existing Doctoral Programs

UTEP offered no doctoral programs until 1974 when authorization was received from the Texas Higher Education Coordinating Board (THECB) to offer a Doctor of Geological Sciences (DGS) degree, reflecting UTEP’s continued distinction as Texas’ original mining school.

For the next 16 years, 1974 to 1990, UTEP was designated by the THECB as a “single-doctoral-granting institution,” effectively prohibiting any further doctoral program expansion. However, it became increasingly clear that as a leading national Hispanic-Serving Institution, with a strong foundation in engineering and science, UTEP had a special responsibility to address the higher education needs associated with the growth and development of the El Paso and surrounding southwestern U.S. border region, as well as the national imperative to increase access to doctoral education for the fast-growing U.S. Hispanic population whose numbers were (and continue to be) seriously underrepresented. Since 1990, UTEP has successfully sought authorization to offer 15 new doctoral programs. Fall 2009 enrollment in all 16 doctoral programs totaled 473 students and was more than 3,800 total graduate students. And, as expected, the quality and focus of UTEP’s doctoral programs have also attracted highly talented doctoral students from across Texas, the U.S., Mexico, and around the globe.

Six new doctoral program proposals have been approved by the University of Texas System and are presently under review by the THECB, and a large number of other proposals are in various stages of preparation by faculty across the campus. Although a relatively new participant in doctoral education nationally, UTEP is already ranked 22nd among all universities in the U.S. in granting science and engineering doctoral degrees to Hispanics. With additional doctoral programs and increased research capacity, UTEP is well on its way to becoming a national leader in graduate education for Hispanics and a major source of future Hispanic faculty members in multiple disciplines for universities across the U. S.

Summary of Existing Programs
Table IV-2 lists the existing doctoral programs in the order in which they were launched. For each program, the table presents the current enrollment and the number of doctorates awarded to date.
<table>
<thead>
<tr>
<th>Program</th>
<th>College(s)</th>
<th>Year Started</th>
<th>Current Enrollment</th>
<th>Doctorates Awarded to Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geological Sciences</td>
<td>Science</td>
<td>1974</td>
<td>24</td>
<td>65</td>
</tr>
<tr>
<td>Electrical and Computer Engineering</td>
<td>Engineering</td>
<td>1990</td>
<td>28</td>
<td>35</td>
</tr>
<tr>
<td>Materials Science and Engineering</td>
<td>Engineering</td>
<td>1993</td>
<td>20</td>
<td>52</td>
</tr>
<tr>
<td>Psychology</td>
<td>Liberal Arts</td>
<td>1993</td>
<td>36</td>
<td>42</td>
</tr>
<tr>
<td>Environmental Science &amp; Engineering</td>
<td>Engineering and Science</td>
<td>1995</td>
<td>41</td>
<td>64</td>
</tr>
<tr>
<td>Educational Leadership &amp; Administration</td>
<td>Education</td>
<td>1996</td>
<td>53</td>
<td>81</td>
</tr>
<tr>
<td>Biological Sciences</td>
<td>Science</td>
<td>1997</td>
<td>49</td>
<td>20</td>
</tr>
<tr>
<td>Borderlands History</td>
<td>Liberal Arts</td>
<td>1998</td>
<td>34</td>
<td>5</td>
</tr>
<tr>
<td>International Business</td>
<td>Business Administration</td>
<td>2003</td>
<td>25</td>
<td>6</td>
</tr>
<tr>
<td>Civil Engineering</td>
<td>Engineering</td>
<td>2003</td>
<td>11</td>
<td>3</td>
</tr>
<tr>
<td>Rhetoric and Composition</td>
<td>Liberal Arts</td>
<td>2003</td>
<td>22</td>
<td>5</td>
</tr>
<tr>
<td>Interdisciplinary Health Sciences</td>
<td>Health Sciences</td>
<td>2004</td>
<td>32</td>
<td>2</td>
</tr>
<tr>
<td>Computer Science</td>
<td>Engineering</td>
<td>2005</td>
<td>24</td>
<td>7</td>
</tr>
<tr>
<td>Chemistry</td>
<td>Science</td>
<td>2006</td>
<td>22</td>
<td>2</td>
</tr>
<tr>
<td>Teaching, Learning, and Culture</td>
<td>Education</td>
<td>2008</td>
<td>36</td>
<td>-</td>
</tr>
<tr>
<td>Computational Science</td>
<td>Engineering and Science</td>
<td>2008</td>
<td>16</td>
<td>-</td>
</tr>
</tbody>
</table>
Several underlying themes are apparent in the composition of this initial group of doctoral programs:

- **Historical focus on STEM fields.** A number of UTEP’s doctoral programs – Geological Sciences, Civil Engineering, Computer Science, Electrical and Computer Engineering, Biological Sciences, and Chemistry – reflect UTEP’s long established science and engineering strengths dating from its establishment in 1914 as the state’s mining school. These programs have in turn helped build UTEP’s capacity to develop a number of programs that respond to regional needs and opportunities, including an innovative Computational Science doctorate.

- **Interdisciplinary and Multidisciplinary Programs.** As UTEP’s graduate and research enterprise grew, innovative inter- and multidisciplinary programs helped to take advantage of critical mass in faculty across several departments or colleges. Early opportunities were realized with the interdisciplinary doctoral degrees in Materials Science and Engineering and Environmental Science and Engineering.

- **Compelling regional need for health professionals and Hispanic health disparities research.** The PhD in Interdisciplinary Health Sciences was developed in response to a regional need for researcher-scholars to contribute to undergraduate and graduate education and conduct research on the myriad health and health disparity issues that challenge this region.

- **Location and cultural context.** UTEP’s location also fostered the development of the PhDs in International Business; Borderlands History; and Teaching, Learning and Culture. Its focus on bilingual/bicultural issues, firmly grounded in social and behavioral sciences, prompted the growth of the doctoral programs in Psychology, Educational Leadership and Administration, and Rhetoric and Composition, the last with a focus on rhetoric as the art of persuasion in multiple cultural contexts.

Eight of UTEP’s 16 doctoral programs have been established since 2003 and are therefore relatively young and still developing. The production of graduates of these newer programs has not yet stabilized, but good progress is being made. For example, the doctoral program in Chemistry, which was approved in 2006,
Examples of UTEP Doctoral Graduates’ Placements

- San Diego Supercomputing Center, Researcher
- IBM T.J. Watson Research Center, Staff Researcher
- Embry Riddle Aeronautical University, Assistant Professor
- Texas Tech University, Associate Professor
- University of Michigan, Assistant Professor
- Florida International University, Assistant Professor
- Stephen F. Austin University, Assistant Professor
- University of Maine, Assistant Professor
- James Madison University, Assistant Professor
- University of Nebraska, Director of Basketball Operations
- U.S. Air Force, Geophysicist
- Border Research Solutions, Director of Research

graduated its first two students in December, 2009. As these programs mature, they are expected to produce graduates at an increased rate.

The demand for doctoral education at UTEP is equal to, and in most cases greater than, what was anticipated when the programs were initially proposed. Moreover, as information about UTEP’s doctoral programs is more effectively disseminated, applicants for doctoral study at UTEP are coming from research universities in California, Arizona, Utah, and New Mexico. UTEP’s increasing reputation as a leading Hispanic-Serving Institution and an emerging national research university has helped attract the interest of Hispanic students at institutions across the Southwest as well as other universities and colleges around the country and throughout Mexico and Latin America.

From a “single doctoral granting institution” to a doctoral university with programs in engineering, the natural and social sciences, health sciences and nursing, education and the liberal arts, UTEP now enables Hispanics of the region, state, and other states and nations to pursue doctoral education at an institution that has successfully achieved a commitment to both access and excellence.

Quality Control & Enhancement
Many of the existing doctoral programs at UTEP are relatively young and are still growing to their projected long-term equilibrium size. Indeed, doctoral program enrollments have consistently grown by double-digit percentages from year to year. Consequently, none of the currently offered programs is under consideration for closure or consolidation. All programs are, however, regularly monitored to assess progress in achieving enrollment, graduation and a number of quality indicator targets, and work is well underway to systematize doctoral program review through a critical self-study and consultation with external reviewers.
There are several major University-wide initiatives to enhance doctoral program quality.

- **New facilities**: Significant investment (nearly $200 million) in three major new buildings—Bioscience Research, Chemistry and Computer Science, and Health Sciences and Nursing—to provide more advanced and expanded laboratory and research spaces for faculty and doctoral students (see Section VI)

- **Renovated facilities**: Major investment in upgrading, converting and renovating current facilities to increase functionality of work and study spaces for doctoral students in all programs (see Section VI)

- **Increased Competitiveness of Doctoral Stipends**: Work is well underway to increase graduate student stipends, systematize their availability and provide additional support for dissertation research expenses (see Section VI)

- **Library resources**: Systematic expansion of resources, especially electronic tools, to respond to needs of current and future doctoral programs (see Section VI)

- **Strategic faculty recruitment and retention**: Aggressive recruitment and retention of faculty members whose expertise is well aligned with current and future doctoral programs (see Section II)

- **Seminars, distinguished speakers, and conference attendance**: Sponsorship and promotion of seminars and distinguished speakers (see Section V)

- **Travel to professional meetings**: Sponsorship of doctoral students to attend conferences and present their work (see Section V)

In addition to these university efforts, the Graduate School has developed a plan to recruit, retain and graduate UTEP’s Hispanic doctoral students (see Section V). At the college level, there are many examples of the employment of continuous
improvement models that use measures of success and benchmarks to evaluate and enhance the quality of doctoral programs. In Health Sciences, for example, work is being done to coach faculty involved in the Interdisciplinary Health Sciences PhD program on developing stronger mentoring skills. In Business doctoral students are integrated into research, teaching and the placement market from their first year – they are assigned mentors, taken to the strongest national conference in their discipline, and encouraged to submit and present an early paper (and more than 50% have been successful). Engineering is implementing a continuous improvement process based on learning outcomes that parallels the plan-monitor-asses-improve cycle in place for their undergraduate programs as part of their ABET accreditation. Liberal Arts has a program of continuous assessment to evaluate curricular effectiveness, monitor student progress, and identify bottlenecks.

As expected of an emerging national research university, all of UTEP’s doctoral programs exhibit dimensions of excellence. UTEP presently recruits and graduates excellent doctoral students; the proof is in the demand for these UTEP graduates and the placements they secure both in and outside of academe (see “Examples of UTEP Doctoral Graduates’ Placements” previous page).

Goals, Objectives, and Strategies
The goal of enhancing the quality of existing doctoral programs will largely be accomplished by meeting the goals and objectives outlined in other sections of this document, including “Research Funding and Productivity” (Section II), “Faculty and Student Development” (Section V), and “Other Resources” (Section VI). To summarize the most directly related objectives:

- **Research and Faculty Capacity**
  - Increase the number of tenured and tenure-track faculty from 508 to 720 by 2020.

- **Productivity and Efficiency of Faculty**
  - Increase by 20% the number of research-active faculty who receive external funding.

- **Recognition**
  - Double the number of faculty who receive national and state recognitions, including membership in national academies by 2020.
  - Increase number of senior faculty with distinguished research accomplishments to one-third of all new hires to highlight and support UTEP’s areas of priority and distinction.

- **Recruit and Graduate Doctoral Students**
  - Raise student stipends to nationally competitive levels.
The specific strategies to be used to achieve these objectives are presented elsewhere in this document. In addition, all doctoral programs will be regularly reviewed through a self-study and external review process that will be overseen by College Deans, the Graduate Dean and the Provost.
Comparisons with National Peers
UTEP has developed a two-level (college and university) approach to identify, track, and analyze nationally ranked peer doctoral programs and to apply the information gathered about these peer programs to benchmark all UTEP doctoral programs:

1. **College-level review of content developments and policy practices at peer programs identified by the individual PhD programs within a College.** These reviews focus on developments within the discipline or field and the policies and practices of the leading national doctoral programs in these fields. Identifying exemplary programs is an ongoing and somewhat subjective process because reputational assessments are often outdated and subject to sudden changes due perhaps to the movement in or out of one or two key individuals within a field. As part of this strategic planning for research the Deans and Program Directors have identified the following peer programs against which to benchmark UTEP’s doctoral programs for the next three years, after which the selections will be reviewed and calibrated as necessary (see Table IV-3).

2. **University-level review of doctoral program faculty performance compared to that at national peer institutions.** The primary indicators of excellence in doctoral programs are in the areas of faculty scholarship and research grant awards. There are many data-base resources available that can be used to compare and benchmark existing doctoral programs or to assess the extent to which faculty performance in an area under consideration for a new doctoral program compares with that of existing nationally ranked programs. In order to utilize these resources fully it is necessary to conduct extensive monitoring and analyses of massive data systems that track publications, citations, and competitive external grant awards over periods of years. Practically speaking, it is not feasible for an individual institution to take on all this research and analytical work on its own.
### Table IV-3: National Peer Institutions by Program

<table>
<thead>
<tr>
<th>Program</th>
<th>College(s)</th>
<th>Nationally-Ranked Peer institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biological Sciences</td>
<td>Science</td>
<td>University of Arizona; University of California—Irvine; University of Kansas</td>
</tr>
<tr>
<td>Borderlands History</td>
<td>Liberal Arts</td>
<td>University of Arizona, Arizona State University, University of New Mexico</td>
</tr>
<tr>
<td>Chemistry</td>
<td>Science</td>
<td>University of Arizona, Arizona State University, University of California—Santa Barbara</td>
</tr>
<tr>
<td>Civil Engineering</td>
<td>Engineering</td>
<td>Arizona State University, Colorado School of Mines, Florida International University</td>
</tr>
<tr>
<td>Computer Science</td>
<td>Engineering</td>
<td>University of Arizona, Kansas State University, University of New Mexico</td>
</tr>
<tr>
<td>Computational Science</td>
<td>Engineering and Science</td>
<td>University of California—Santa Barbara, Purdue University, University of Texas—Austin</td>
</tr>
<tr>
<td>Educational Leadership &amp; Administration</td>
<td>Education</td>
<td>University of Cincinnati, Ohio State University, University of Wisconsin-Madison</td>
</tr>
<tr>
<td>Electrical &amp; Computer Engineering</td>
<td>Engineering</td>
<td>Arizona State University, University of New Mexico, South Dakota School of Mines</td>
</tr>
<tr>
<td>Environmental Science &amp; Engineering</td>
<td>Engineering and Science</td>
<td>University of California—Riverside, Colorado School of Mines, Pennsylvania State University</td>
</tr>
<tr>
<td>Geological Sciences</td>
<td>Science</td>
<td>University of Colorado, Pennsylvania State University, University of Utah</td>
</tr>
<tr>
<td>Interdisciplinary Health Sciences</td>
<td>Health Sciences &amp; Nursing</td>
<td>University of Illinois at Chicago, Virginia Commonwealth University, Western Michigan Univ.</td>
</tr>
<tr>
<td>International Business</td>
<td>Business Administration</td>
<td>University of Hawaii, University of Michigan, Rutgers University</td>
</tr>
<tr>
<td>Materials Science &amp; Engineering</td>
<td>Engineering</td>
<td>University of Arizona, Arizona State University, Colorado School of Mines</td>
</tr>
<tr>
<td>Psychology</td>
<td>Liberal Arts</td>
<td>Pennsylvania State University, Arizona State University, University of Nebraska</td>
</tr>
<tr>
<td>Teaching, Learning &amp; Culture</td>
<td>Education</td>
<td>University of Arizona, Arizona State University, University of Pennsylvania</td>
</tr>
<tr>
<td>Rhetoric &amp; Composition</td>
<td>Liberal Arts</td>
<td>University of Massachusetts—Amherst, Pennsylvania State University, Purdue University</td>
</tr>
</tbody>
</table>
While UTEP expects individual programs to engage in periodic program reviews and to report on analyses and rankings produced within national disciplinary associations, a decision was made to build its ongoing strategic planning for research on a more objective and externally-validated base. To that end, UTEP has entered into a multi-year partnership with the company Academic Analytics, the national market leader in faculty productivity assessment. Although this is a substantial commitment, in terms of both financial resources and staff time within UTEP’s Center for Institutional Evaluation, Research and Planning (CIERP), it is consistent with UTEP’s standards for comprehensive data collection, rigorous analysis, and transparent evidence-based planning and decision-making.

UTEP will be using several of the metrics compiled by Academic Analytics to compare and track the performance of faculty in each individual PhD program against those of their peers in all other PhD programs in the field in the United States. Among the metrics we are tracking are the following:

- percentage of faculty with journal publications,
- percentage of faculty with book publications,
- citations per publication,
- journal publications per author,
- percentage of faculty with a grant,
- grant dollars per faculty member, and
- percentage of faculty with a national award or recognition.

Additionally, the THECB’s 18 Characteristics of Doctoral Programs will be used to compare UTEP’s doctoral programs with those at the other emerging Tier One research institutions in Texas.

Not unexpectedly, all of UTEP’s doctoral programs exhibit some dimensions of excellence. As shown in Table IV-4, based on 2007-2008 data provided by Academic Analytics, many UTEP programs are already achieving performance levels along certain dimensions that match or exceed those at longer-established and internationally recognized doctoral programs. For example, UTEP’s Computer Science program ranked first in the nation in the percent of faculty with journal publications; and UTEP’s Geology program has approximately the same percentage of national award winners as UCLA’s Geology program.

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9  www.academicanalytics.com
Table IV-4. Dimensions of High Performance for Selected Programs

<table>
<thead>
<tr>
<th>Metrics</th>
<th>UTEP Value and Comparable Tier One Program</th>
<th>UTEP's High Performing Program and Comparable Tier One Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of Faculty with Journal Publication</td>
<td>100%</td>
<td>UTEP-Computer Science</td>
</tr>
<tr>
<td></td>
<td>98%</td>
<td>University of California, Berkeley - Computer Science</td>
</tr>
<tr>
<td>Percentage of Faculty with Book Publication</td>
<td>46%</td>
<td>Texas A&amp;M - History</td>
</tr>
<tr>
<td></td>
<td>44%</td>
<td>UTEP - History</td>
</tr>
<tr>
<td>Journal Publications per Author</td>
<td>3.96</td>
<td>Iowa State University - Civil Engineering</td>
</tr>
<tr>
<td></td>
<td>3.64</td>
<td>UTEP - Civil Engineering</td>
</tr>
<tr>
<td>Percentage of Faculty with Grant</td>
<td>22%</td>
<td>Iowa State University - Environmental Science</td>
</tr>
<tr>
<td></td>
<td>17%</td>
<td>UTEP - Environmental Science</td>
</tr>
<tr>
<td>Grant Dollars per faculty</td>
<td>$111,691</td>
<td>The Ohio State University - Computer Science and Information Systems</td>
</tr>
<tr>
<td></td>
<td>$102,351</td>
<td>UTEP - Computer Science</td>
</tr>
<tr>
<td>Percentage of Faculty with Award</td>
<td>7%</td>
<td>University of California, Los Angeles - Geology</td>
</tr>
<tr>
<td></td>
<td>6%</td>
<td>UTEP - Geology</td>
</tr>
</tbody>
</table>

These data comparisons with nationally ranked programs also enable continuous assessment of the progress made in new and developing programs. For example, the International Business PhD was launched in 2003 and has graduated a total of 6 PhD’s so far. Between 2005 and 2009 the College of Business Administration faculty published 218 peer-reviewed journal articles, of which 25% are rated at the profession’s highly-regarded or exceptional levels on impact and quality, and another 27% are ranked at the well-regarded level. These impact and quality measures show UTEP is already highly competitive with many well-established, nationally-ranked programs. Consider, for example, the Business faculty size and productivity at UTEP and at the University of Michigan: while the two programs are of comparable size (UTEP ranking 21st nationally and Michigan slightly larger...
at 18\textsuperscript{th}), UTEP ranks 4\textsuperscript{th} nationally on the number of faculty with academic journal publications compared to Michigan at 23\textsuperscript{rd}; and UTEP ranks 7\textsuperscript{th} nationally on the total number of journal publications, while Michigan ranks 25\textsuperscript{th}. The strength of the faculty indicated by these and other performance measures led the College to explore developing several of its concentrations in the International Business PhD into separately defined programs (see Section IV below on New PhD Programs). This offers a good illustration of performance informing planning.

UTEP intends to achieve demonstrable progress towards excellence in all dimensions for all programs by 2020. All programs will establish benchmark performance targets in scholarship and grant funding, on a par with those at their national peer institutions. Individual academic programs and CIERP will use resources, such as Academic Analytics, to measure and report progress to the Deans and Provost. Among the strategies developed to achieve the target benchmarks by program are:

- to engage the UTEP Library in increasing faculty awareness of the processes by which scholarship and citations are recorded in resources such as SCOPUS\textsuperscript{10} and Elsevier\textsuperscript{11}; and
- to engage CIERP in the development of web-based tools that will allow Deans and faculty to track each program’s progress toward its specific goals.

**New Doctoral Programs**

The mission of access and excellence and the need to make doctoral education available to Hispanic students in disciplines of interest and where they are needed drive UTEP’s plans for new doctoral degrees.

UTEP’s colleges examine high-need areas in the region and nationally, as they consider whether and when to develop a proposal to offer new doctoral programs. They also consider such factors as the academic areas where there is a national or regional priority need for Hispanic faculty, as well as the current strengths of the UTEP faculty, existing facilities, and other resources such as library support. The existence of funding opportunities for research in the areas represented by proposed degrees also helps shape decisions. Of special importance is the balance between societal need and student demand, and UTEP’s continued concurrent commitment to access and excellence.

\textsuperscript{10} www.info.scopus.com
\textsuperscript{11} www.elsevier.com
Areas of Emphasis

In 2004, the Washington Advisory Group (WAG) reported on areas for potential expansion of doctoral education on the UTEP campus. The report, which was presented to the UT System Board of Regents, cited UTEP’s growing research base and its ability to attract quality faculty and win competitive research grants. It recommended expansions of UTEP’s degree programs in the areas of border biomedical research, environment, energy, biology, geosciences, and computer sciences. Based on their recommendations, as well as recommendations from on-campus and off-campus constituencies, including undergraduate and graduate students, alumni, and members of the appropriate professional and academic communities, since 2004, UTEP has submitted ten doctoral proposals to the University of Texas System and the Texas Higher Education Coordinating Board (THECB). Four of them have been approved and successfully launched: Computer Science, Chemistry, Teaching Learning & Culture, and Computational Science. The following six proposals are currently pending review at the THECB:

- PhD in Biomedical Engineering
- PhD in Manufacturing Engineering
- PhD in Ecology and Evolutionary Biology
- PhD in Transnational Society, Culture, and Politics
- Doctor of Nursing Practice
- Doctor of Physical Therapy

Each of these programs represents attention to one or more of the research priorities that UTEP has designated in this strategic research plan (see Section II). They also benefit from faculty expertise that has been recruited over a period of years, especially senior faculty who have national and international reputations in these and cognate areas. In addition to preparing a highly qualified workforce, the proposed doctoral degrees will produce graduates who can enter the professoriate and increase the capacity of institutions across the U.S. that are serving a growing Latino population. Proposed programs will also address areas of priority for the region and nation.
For example, there is a critical national shortage of health professions faculty who are educated at the doctoral level. Within Texas and throughout the southwest, this shortage is predicted to grow, in part because there is a pool of current faculty who are rapidly approaching retirement age. This faculty shortage places severe constraints on universities’ capacity to address the shortage of health professionals by expanding academic programs – there are simply not enough faculty. The proposed doctoral degrees in Nursing Practice and Physical Therapy are designed to produce graduates greatly needed to address critical regional, state and national needs at the newly established terminal qualification level.

The Biomedical Engineering doctoral program will be one of the nation’s few programs in this area. Graduates of the Biomedical Engineering program will be prepared to become faculty in one of the newest and fastest growing areas among the Engineering disciplines. The work in this program will relate directly to UTEP’s research priority on health and biomedical sciences and engineering, and its cross-cutting research expertise on emerging technologies in the health field.

The doctoral degree in Transnational Society, Culture, and Politics will be an interdisciplinary program that reflects UTEP’s strengths in border and global issues research. Transnational interactions (e.g., connections between migration-sending and receiving communities) are among the most important and dynamic aspects of modern society, and are at the forefront of scholarship in the social sciences. This program will draw upon UTEP’s cross-cutting research expertise in U.S.-Mexico and Latin America.

The proposed Ecology and Evolutionary Biology doctoral program integrates the academic areas of behavioral ecology, biogeography, biosystematics, community/ecosystems ecology, conservation biology, evolutionary ecology, evolutionary genetics, paleobiology, physiological ecology/comparative physiology, population ecology, population genetics, and the impact of global change, areas that contribute to UTEP’s research priority in environmental research.
The degree in **Manufacturing Engineering** will cut across research areas in Energy and Environment and National Defense and Border Security. Faculty strengths include fabrication of intricate 3D components, incorporation of these components in sizes ranging from the macroscale to the nanoscale, and integration of these components, using systems engineering techniques, into the complex systems manufactured by the aerospace and defense industry. A major focus in the proposed program involves combining these emerging technologies in integrated environments to produce, and then commercialize, unique end-use functional devices and systems.

As with the six pending programs, the new programs planned and under consideration for the next decade will build on demonstrable faculty strength in high-need areas for the region and nation, in particular areas in STEM fields that build on the University’s strengths and strategic direction, as well as areas that provide recognition to the University based on the unique populations that it serves. Proposed programs will need to build on UTEP research priorities and leverage the expertise of new hires and growing networks for interdisciplinary and transformative work. New programs are also expected to prepare a diverse and globally engaged workforce.

UTEP’s strategic plan is to grow from 22 doctoral programs (the current 16 plus the 6 pending) to about 40 doctoral programs by 2020. Our analysis of the peer set of emerging national research universities outside of Texas shows that for an institution of about 30,000 students, which we will be approaching by the end of the decade, a complement of about 40 doctorates is reasonable (e.g., the number of doctoral programs at our peers currently range as follows: from the University of California, Santa Cruz, 31 doctorates; University of California, Riverside, 39; University of Delaware, 43; University of Arkansas, 44; to Virginia Commonwealth University, 60).
### Table IV-5: New Doctoral Programs at UTEP: Pending, Planned & Under Consideration, 2010-20

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<tbody>
<tr>
<td>Business Administration</td>
<td>• Finance</td>
<td>• Management</td>
<td>• Information Systems</td>
</tr>
<tr>
<td></td>
<td>• Accounting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>• Higher Education</td>
<td>• Educational Research &amp; Evaluation</td>
<td>• Special Education</td>
</tr>
<tr>
<td>Engineering</td>
<td>• Biomedical Engineering</td>
<td>• Energy Science &amp; Engineering</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Manufacturing Engineering</td>
<td>• Engineering Education</td>
<td></td>
</tr>
<tr>
<td>Health Sciences</td>
<td>• Physical Therapy</td>
<td>• Human Nutrition</td>
<td></td>
</tr>
<tr>
<td>Liberal Arts</td>
<td>• Transnational Society, Culture, &amp; Politics</td>
<td>• Communication</td>
<td>• Linguistics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Multicultural Literature</td>
<td></td>
</tr>
<tr>
<td>Nursing</td>
<td>• Nursing Practice</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Science</td>
<td>• Ecology &amp; Evolutionary Biology</td>
<td>• Bioinformatics</td>
<td>• Pure &amp; Applied Mathematics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Cell &amp; Molecular Biochemistry</td>
<td>• Forensic Science</td>
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<tr>
<td></td>
<td></td>
<td>• Statistics</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Fundamental &amp; Applied Physics</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Science &amp; Math Education</td>
<td></td>
</tr>
<tr>
<td>University College</td>
<td>• Public Administration</td>
<td></td>
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</tbody>
</table>
The Provost, Graduate School and College Deans have identified the next set of 14 doctoral programs to develop proposals and plans to be launched between 2011-17. All of these program areas already have a minimal critical mass of tenured research-active faculty at UTEP right now -- sufficient to direct doctoral research with a reasonable number of students per faculty member (≥ 23 on average), and a reasonable rate of degree production from the department or program (≥ 3-4 on average). Moreover, these would also be areas in which there is a strong probability of additional faculty growth during the next decade. A schedule is being developed to phase in these new program proposals over the seven-year period, with the specific timing and sequence somewhat dependent on the rate at which resources can be gathered for doctoral student support. All of these programs will, of course, undergo the full rigor of curricular development and proposal review by faculty governance on campus, prior to submission to The University of Texas System and THECB.

An additional seven programs are under consideration for planning development and launch after 2017. It is anticipated that 3-4 of them may be selected for submission between 2017-20. In most of these cases, we are presently below critical mass, but only by 1-2 tenured research-active faculty members. A doctorate is fully feasible in every case.

**Assessment**

UTEP is establishing a rigorous program review assessment plan using indicators from The 18 Characteristics of Doctoral Programs developed by the THECB’s Graduate Education Advisory Committee. The program review will assess how well the doctoral program:

- aligns with UTEP’s institutional strategic plan to become the first national research university serving a 21st century demographic;
- contributes to UTEP’s areas of research priority and national recognition;
- contributes to closing the educational achievement gaps among groups within the Texas population; and
- explores and documents strategies to improve program outcomes, recruitment, and retention.
Each program review will include the development of a self-study document by the department(s) offering the degree and an on-site evaluation visit conducted by a team of evaluators, including two distinguished faculty members from doctoral programs at national research universities, and one UTEP faculty member whose appointment is outside the program’s department(s). A written program evaluation will be prepared by the site visit team and provided to the program director, department chair(s), dean(s) of the college(s) in which the program resides, and the Provost. Each evaluation must include suggested steps for program improvement. Reviews will be conducted every five years.

Regional Impact

The development of new doctoral programs will have a number of substantial and positive effects on the El Paso region. All colleges will contribute to the processes of recruiting, serving, and graduating Hispanic students who will become professionals in the fields from which they graduate. Each college will produce Hispanic members of the professoriate, individuals who increasingly reflect the institution’s student body and serve as its role models.

- The doctoral programs in the **Colleges of Science and Engineering** will contribute to the high-demand STEM workforce for existing industries, as well as spin-off technology and start-up companies that will generate jobs and wealth for the region.

- The doctoral programs in the **College of Business Administration** will contribute internationally competent business professionals and the faculty who are needed to research border economies and the global enterprise.

- The **College of Education** will prepare educational leaders for schools and school districts that will educate thousands of the nation’s citizens, and professors who will develop academic leaders in the nation’s schools and universities.
• The doctoral programs in the **College of Health Sciences** and the **School of Nursing** will graduate much-needed healthcare professionals, educated in advanced practice in nursing and physical therapy, within a binational and multicultural context that affects the health care of the region’s residents. These two academic units will continue to graduate researchers and scholars investigating multiple and interdisciplinary issues within the health care field.

• The **College of Liberal Arts** will educate scholars who will address issues related to linguistic, social, political, literary and cultural change in national, transnational, and international contexts, and the role of communication in these change processes. It will prepare Hispanic members of the professoriate in areas of great interest to Hispanic students.

• **University College** will provide doctoral graduates for leadership roles in the public sector, including regional and local governments, and Federal intelligence and national security agencies.

The under-representation of Hispanics in all sectors of the professional workforce will be improved by the development of the new doctoral programs at UTEP. Likewise, research and development will improve the relatively weak economic infrastructure that has historically hindered the economic advancement of several sectors of the El Paso economy and community. UTEP must expand local opportunities for the talent that resides within the El Paso region. As the nation’s demographic profile continues to change and Hispanics become an even larger percentage of the future workforce, it is essential that more Latinos become educators and professionals prepared to foster the advancement of all segments of the population.

In 2009, Hispanic Business magazine ranked UTEP’s MBA program second in the nation for Hispanic students and its College of Engineering third in the nation as a graduate engineering school for Hispanics. Doctoral programs in Psychology, Biological Sciences, and Rhetoric and Composition are gaining a strong national reputation, as judged by the number of out-of-state students who are requesting information about these programs. The proposed new doctoral programs will further enhance doctoral education at UTEP, which is already emerging as a preeminent graduate institution for Hispanic students.
At UTEP, becoming the nation’s first national research university that serves a 21st century demographic will require us and the State of Texas to address many inequities including “closing the gaps” in the numbers of Hispanics graduating from college, earning Master’s degrees, and ultimately earning doctoral degrees. UTEP’s emergence as a fully-fledged national research university will also help realize untapped opportunities in the region’s economic development, and play an essential role in providing Hispanic professors to STEM fields, business fields, the humanities, education, and the social sciences. In order to get there, UTEP will develop and find the support to increase the number of its doctoral programs at this Hispanic-Serving Institution to the levels that are found elsewhere in the emerging research universities in Texas and across the U.S., so that, in 2050, when fully one-third of Americans are Hispanic, the nation’s professional workforce and its university professoriate will be a reflection of the society surrounding them.
Section V: Faculty and Student Development

Throughout its drive to become the first national research university serving a 21st century demographic, UTEP has recognized the criticality of attracting, enhancing the performance of, and retaining excellent faculty and students.

It has been a long-standing commitment of the University to attract and retain nationally and internationally recognized faculty who share the University’s commitment to quality education and research. Through units on campus such as the Center for Effective Teaching, and Learning (CETaL) and the Office of Research and Sponsored Projects (ORSP), UTEP has focused on developing and supporting faculty members so that they can reach high levels of performance in both education and research. Excellence includes a commitment to higher education access for the region’s young people; and with its dedicated faculty and staff, UTEP has received national recognition for its practices and programs that provide students with the knowledge and experiences to make them competitive in graduate and professional schools and in their professional careers. UTEP’s recent major investments in building capacity to support and enhance excellence in research and teaching have created the foundation upon which future institutional growth and development will be based.
Faculty Development: Current Status

Key components of faculty development include providing faculty research support, recognizing faculty for their achievements within the University and assisting them to achieve national and international recognition, fostering collaborations and partnerships within and outside the institution, and recruiting new faculty who contribute to UTEP’s mission and growing national recognition.

Faculty Research Support

UTEP has established infrastructure and programs to assist faculty members to be more productive, more innovative, and more effective in their research and teaching. For research, the Office of Research and Sponsored Projects supports the coordination and submission of grant proposals, while the Contracts and Grants Department supports grant accounting, financial reporting, and post-award financial monitoring. The Office of Technology Transfer supports management and protection of intellectual property assets and coordinates with the Center for Research Entrepreneurship and Innovative Enterprises (CREIE) to support entrepreneurship and commercialization. Faculty productivity is also strengthened by the University’s centrally supported Information Technology Center and through such strategies as mentoring and distinguished lecture and seminar series.

Institutional Research Infrastructure

In support of a doctoral/research intensive university with a growing, multi-disciplinary research portfolio, UTEP’s Office of Research and Sponsored Projects (ORSP) successfully manages a broad range of multi-university, multi-year, multi-million-dollar, high-performing programs for federal agencies such as NSF, NIH, EPA, DoE, and DoD. Under the direction of the Vice President for Research, ORSP provides comprehensive support for proposal review, proposal and budget development, proposal submission, contract negotiation, post-award management and expenditure review, and research compliance oversight and training to ensure that the University meets its contractual obligations and complies with all federal and state guidelines. ORSP has documented grants management and proposal policies and procedures, upgraded staff support for human subjects review and animal care and use, and implemented new training programs for all researchers. The services provided by ORSP allow faculty to concentrate their time and talent more on their research and less on the mechanics of meeting agency guidelines and requirements from pre-award to post-award.
ORSP has expanded its services by creating a new position, Associate Vice President for Research, to lead a proposal development team of three experienced proposal writers. The role of the development team is to alert faculty to funding opportunities, provide guidance on proposal development, seek internal/external critical review of proposal drafts, facilitate the creation of a collaborative team of experts to respond to an opportunity, and facilitate brainstorming sessions. The team presents hands-on monthly workshops that focus on different aspects of proposal development, as well as yearly luncheons in individual college settings to inform new faculty of the services available to them in ORSP. ORSP also sponsors events that bring program officers from funding agencies to the campus to present workshops and become acquainted with the UTEP faculty and campus infrastructure.

The Center for Research Entrepreneurship and Innovative Enterprises (CREIE) was established in 2009 to stimulate innovation, unify campus initiatives, and create a central identity for entrepreneurship, technology transfer (in coordination with the Office of Technology Transfer), and commercialization at UTEP. CREIE reaches out to guide research faculty on how to bring their scientific advance or invention to the marketplace, and provides consulting, coaching, training and networking services in areas such as 1) best-in-class innovation practices, 2) technology, intellectual property, patent and licensing strategies, 3) market research, business strategy and plan development, 4) company formation, organization structures and capitalization strategies, and 5) incubation.

UTEP’s national research university aspirations must be fully understood and embraced by support departments across the campus. Thus, many offices now have made a commitment to strengthening the University’s services for faculty research. Within Business Affairs, for example, there is a well established Contracts and Grants department. Additional units that provide support for faculty research include Accounts Payable, Inventory, and Facilities Services. The Office of Human Resources Services employs professionals familiar with federal employment policies with respect to grants and contracts. Information Technology provides technical support, including Internet 2, National Lambda Rail Network and LEARN Network connections; maintenance of the Cyberinfrastructure of the University; and high-performance computing research facilities.
Institutional and State Research Funding Support

UTEP currently applies some of its Research Development Funds to support the University Research Institute (URI), which serves faculty in the early stages of project development to increase the competitiveness of external funding proposals. URI provides seed money for projects that assist in the professional development of junior faculty members, new research initiatives that have potential to attract external funding, and projects that make efficient use of resources and facilities available at the University.

Over the past five years, UTEP has received almost $7 million to help support the research infrastructure development required to retain and recruit 19 highly competitive STEM faculty members.

Mentoring

UTEP’s growth and development during the past 20 years have been supported by an aggressive faculty mentoring program. In 2003, UTEP received an NSF ADVANCE grant to initiate institutional change with the goal of serving as a model for other institutions that seek to increase the representation and advancement of women, in particular those from underrepresented groups, in academic science and engineering careers. One significant feature of the ADVANCE program was the development of a Faculty Mentoring Program for Women (FMPW), which has been institutionalized and expanded to include all UTEP faculty members in the Collaborative Faculty Mentoring Program (CFMP). CFMP is managed by the Center for Effective Teaching and Learning (CETaL) and assists new faculty to create non-hierarchical networks of mentors who can help address specific areas of concern through their collective knowledge and experiences.
Distinguished Lectures

A characteristic of a research university is the opportunity it creates for the active exchange of ideas and new work being done both on the home campus and elsewhere. Thus, UTEP sponsors a number of distinguished lecture series that bring eminent scientists, engineers, artists, and other individuals who are leaders in areas of contemporary significance to speak to students, faculty, administrators, and often the general public. Such activities enrich the University and the community through shared insights, discussion of topics of interest and significance, and elevation of the University’s stature. For example, UTEP hosts a Millennium Lecture Series that invites experts to speak on a wide range of topics ranging from contemporary issues in Latin America (e.g., Ambassador Andres Rozental, former Deputy Foreign Minister of Mexico) to renewable energy (e.g., Dan Arvizu, Director of the National Renewable Energy Laboratory).

Departments, colleges, and centers across the campus regularly host seminar and lecture series. For example, the College of Science hosts the Fessinger Memorial Lecture Series each year and the CyberShARE Center of Excellence hosts two distinguished lectures each year related to Cyberinfrastructure in science, engineering, and computational sciences. Many individual departments have monthly or weekly seminar speakers. These activities provide opportunities for prominent researchers to meet personally with faculty and students in their laboratories, learn about research at UTEP, identify opportunities for collaboration, and share their experiences with students and faculty.
Growth Plan for Faculty Research Development

Analysis of the performance of UTEP faculty who hold extramural grants shows that the number of grants held by tenured and tenure-track faculty members at the University has more than doubled in 4 years (218 funded research projects in FY 2005 compared to 420 in FY 2009), while the number of such faculty increased by only 6.4% (from 468 to 498) in the same time period. Although this overall productivity gain is very good, a Tier One level performance will require an increase in the total research dollars per individual faculty member. UTEP ranked 4th among Texas public universities in FY 2008 in federal research expenditures per faculty member (at $61,424); however, the expectations of Tier One performance are in the range of $150,000 per faculty member, making this a target for improvement.

UTEP is committed to achieving its goal of improving the productivity, innovation, and effectiveness of research faculty, and the related objective of increasing by 20% the number of research-active faculty who receive external funding (see Table V-1, pg. 135). To accomplish this, UTEP is adopting strategies that connect funding opportunities to faculty expertise, facilitate and encourage proposal development, and improve the quality of proposals submitted to
external agencies. For example, the University will create and enhance synergistic opportunities for faculty (within and outside UTEP) to interact through roundtable discussions and think-tank sessions, with the goal of generating multi-disciplinary, cross-institutional proposals in areas of importance to funding agencies. UTEP will also establish a consistent research mentoring approach across the University with a well-defined role for mentors. An expected outcome of effective mentoring is an increase in the number of faculty who seek early career awards from federal agencies, as well as an increase in competitive proposals.

Competitiveness will be addressed by the University’s strong encouragement for more internal and external review of proposals and scholarly writing. The University will identify and engage disciplinary experts, from UTEP and outside UTEP, to provide critical review of proposed projects. ORSP’s proposal development team will also provide review of key criteria that are critical to proposal success.

The University will develop strategies that encourage the faculty not only to conduct funded research, but also to provide excellence in delivering UTEP’s educational programs, inside and outside the classroom. For example, UTEP will continue to value faculty efforts in seeking external funds and contributions that support both access and excellence, as related to student development and associated pedagogical research. To reinforce this, strategies and policies will be reviewed that promote the holistic integration of research and education through planning and evaluation processes for units and faculty. Research productivity will also be enhanced by increasing the number of post-doctoral and doctoral students funded on research projects, while also ensuring continued research opportunities for undergraduate students.

**Faculty Recognition**

To encourage, recognize, and reward outstanding faculty, The University of Texas at El Paso annually presents Distinguished Achievement Awards to faculty and staff members in recognition of outstanding achievement in the
areas of research, teaching, and service. In addition, the University has received support from generous donors to establish more than fifty endowed chairs and professorships to recognize, recruit and retain exceptional faculty (see Appendix B for a complete listing).

Several UTEP faculty members have received the highest academic honors awarded in the state of Texas and in the University of Texas System. The University is especially proud of and inspired by their recognition (see sidebar). It is noteworthy that all the Colleges across the UTEP campus are represented among these award-winning faculty:

- Six UTEP faculty members have been recent recipients of the Minnie Stevens Piper Professor Awards that annually recognize outstanding faculty at two- and four-year colleges and universities in Texas, both public and private.

- In the inaugural year of the new UT System Board of Regents’ Outstanding Teaching Awards, nine UTEP faculty members were honored as recipients of the award. UTEP’s commitment to an institutional balance between access and excellence is reflected in its support for and recognition of achievements in both teaching and research. Many of UTEP’s faculty members excel at both.

Faculty members who have recently received national recognition include the following:

- Tom Davis, director of UTEP’s Center for Inland Desalination Systems and a nationally recognized desalination expert, received an Innovation Award for 2009 from Veolia Water, which is one of the largest water services companies in the world, in Technology and Product Development for his Zero Discharge Desalination system.

- Chemistry Professor and Chair Jorge Gardea-Torresdey received the 2009 Society for the Advancement of Chicanos and Native Americans in Science Distinguished Scientist Award.
• Professor and Associate Vice President of Research Ann Gates received the 2009 Richard Tapia Achievement Award for Scientific Scholarship, Civic Service, and Diversifying Computing from the Coalition to Diversify Computing, a joint organization of the Association for Computing Machinery, Computing Research Association, and the IEEE Computer Society.

• Physics Professor Jorge Lopez was named Fellow of the American Physical Society.

• Christian A. Meissner, Associate Professor of Psychology and Criminal Justice, received the Saleem Shah Award for "Early Career Excellence in Psychology and Law" from the American Psychology-Law Society and the American Academy of Forensic Psychology.

• The International Metallographic Society has named Dr. Larry Murr the 2008 Henry Clifton Sorby Award winner. The Sorby Award is the organization’s most prestigious award, presented annually in recognition of lifetime achievement. In addition, Dr. Murr was honored with the 2007 Educator Award from the Minerals, Metals & Materials Society for his enthusiastic and creative dedication to education of undergraduate and graduate students through teaching, research, and book writing.

• Dr. Margie Perez-Padilla, Clinical Assistant Professor of the UTEP/UT-Austin Cooperative Pharmacy Program, received the American Pharmacists Association-Academy of Pharmacy Practice and Management Merit Award.

• Highly acclaimed UTEP Creative Writing Professor Benjamín Alire Sáenz has won several major literary awards for his many outstanding books. Most recently he was named by Writers and Poets Magazine as one of the world’s 50 most inspiring writers. Saenz has also received The 2009 Tomas Rivera Book Award, the 2008 Southwest Book Award, the Chicago Public Library 2008 Best of the Best Books for Teens, and the New York Public Library Stuff for the Teen 2008 Award.

• Computer Science Professor and Chair Eunice Santos has been selected to receive the IEEE Computer Society’s 2010 Technical Achievement Award “for pioneering contributions to Computational Social Network Systems.”
• Communication Professor Arvind Singhal has been appointed as the William J. Clinton Distinguished Fellow in the Clinton School of Public Service at the University of Arkansas.

• Professor Rachelle Thiewes, UTEP’s internationally recognized metals artist whose work has been exhibited in the Smithsonian American Art Museum, the Metropolitan Museum of Art, and the Victoria and Albert Museum, was named Texas Master 2009 by the Houston Center for Contemporary Craft, and received a highly prestigious Fiskars (Finland) Artist in Residence award.

Growth Plan for Faculty Recognition

To gain visibility as a national research university, UTEP will focus on increasing the number of state, national, and international awards to its outstanding faculty. UTEP will continue to establish an environment that promotes broad recognition and celebration of faculty achievement and that increases UTEP’s presence on the national and international stages. To meet the objective of doubling the number of faculty who receive international and national recognitions, UTEP will establish a Faculty Recognition Committee to identify and nominate high-achieving faculty for professional recognition. In addition, UTEP will launch an aggressive national marketing campaign that increases awareness among the general public and academia of the research, education, creative production, and scholarly achievements of outstanding UTEP faculty.

Collaborations and Partnerships

The University supports faculty collaborations with a variety of partners, including sister institutions in the UT System, including:

- James E. Nymann; Mathematics; Namibia
- Roberto E. Villarreal; Political Science; Mexico
- Shelley S. Armitage; American Literature; Poland
- Thomas M. Fullerton; Business Administration; Mexico
- Carl T. Jackson; American History; Japan
- Edward G. Sewell; Mathematics; Argentina
- Sandra M. Deutsch; History (non-U.S.); Argentina
- Valery G. Shekhter; Linguistics; Ukraine
- Irasema Coronado; Political Science; Germany
- John A. Peterson; Anthropology & Archaeology; Philippines
- Charles G. Elerick; Linguistics; Panama
- Irasema Coronado; Political Science; Mexico
- Mary-Margaret Weigel; Public/Global Health; Mexico
- Judith H. Munter; Education; Mexico
- Carol L. Clark; American Studies; Jordan
- William H. Robertson; Education; Chile
- Godwin J. Udo; Information Sciences; Nigeria
- Sandra I. Garabano; Language and Literature (non-U.S.); Chile
• University of Texas Medical Branch (UTMB): UTEP is working with UTMB to establish an infectious disease surveillance program and a shared regional presence for infectious disease on the border in cooperation with the Center for Bio-defense and Emerging Infectious Diseases. UTEP’s BSL3 laboratory capabilities are being expanded through shared access to UTMB’s facilities.

• UT MD Anderson: Collaborations focus on the development of custom, patient-specific titanium and cobalt-chrome medical implants that will significantly improve patient outcomes; research to discover new biomarkers for the early diagnosis and prognosis of cancer; and the development of drugs to stimulate the growth of T-cells for anti-rejection of organ transplants.

• University of Texas Houston Health Sciences Center School of Public Health (UTH-HSC): With a branch of the School of Public Health in El Paso, this collaboration has been longstanding. The most visible current partnership is with UTEP’s College of Health Sciences and School of Nursing in the NIH-funded Hispanic Health Disparities Research Center.

• University of Texas Health Sciences Center-San Antonio (UT HSC-SA): NIH funding has enabled UTEP physicists to work with UT HSC-SA in the development of a medical physics program at UTEP.

• Texas Tech’s new Paul Foster School of Medicine (PFSOM) in El Paso: UTEP faculty and researchers are collaborating with the PFSOM to address research challenges of mutual interest and relevance to the border community. The areas include breast cancer, metabolic disorders, infectious diseases, and neurological disorders, all focused on health disparities associated with the border population.

• William Beaumont Army Medical Center at Ft. Bliss: Collaborative activities with research scientists from the William Beaumont Army Medical Center (WBAMC) are addressing emerging issues affecting troops returning from deployment to the Ft. Bliss/El Paso community such as post traumatic stress disorders, traumatic brain injuries, quality of life, among others. In
addition, the two institutions have agreements in place for sharing of research and instrumentation facilities.

- El Paso Water Utilities: UTEP is partnering with the State of Texas and the El Paso Water Utilities with the establishment of the Center for Inland Desalination Systems to address water desalination research and applied technology in support of the Sen. Kay Bailey Hutchison Inland Desalination Plant.

A significant regional collaboration is the NSF-funded El Paso Collaborative for Academic Excellence, which has worked with the city’s education, civic, and business leaders to foster higher educational attainment among all young people in El Paso, from Pre-Kindergarten through the University. Starting in the early 1990’s, UTEP began working with school district and community college partners through the El Paso Collaborative for Academic Excellence to transform and vertically integrate education for the region’s young people. NSF-funded programs ranging from the Urban Systemic Initiative to the Math-Science Partnership have increased mathematics and science test scores throughout El Paso and encouraged students to seek advanced preparation in those fields. As part of evaluation requirements for its NSF-funded programs, the Collaborative gathered voluminous data from the participating school districts in terms of test scores, enrollment in college preparatory math and science courses, and high school graduation rates. The data show that El Paso now excels in graduation rates, particularly among Hispanics, and in numbers of students completing college preparatory courses (see Figures I-3 and III-4). The work of the Collaborative along with education-reform efforts at UTEP will continue to have impact through the Center for Research on
Educational Reform (CRER), which will disseminate best practices that can be adopted by school districts with high Hispanic populations in Texas and the Southwest as a whole.

UTEP has also developed several important collaborative structures on campus. The NSF-funded CyberShARE Center of Excellence is building the infrastructure to support collaborations across campus. Its current emphasis is on environmental sciences, geological sciences, computer science, computational sciences, and education. This Center is becoming a model for interdisciplinary research and collaboration with its strong ties to the national Geosciences Network (GEON), Circumarctic Environmental Observatory Network (CEON), National Ecological Observatory Network (NEON), and the Inference Web community. In addition, CyberShARE is a Campus Champion of TeraGrid, which provides distributed Cyberinfrastructure for open scientific research. As a Campus Champion, CyberShARE serves as the local focal point for information and access to high-performance computational resources available throughout the eleven TeraGrid resource-providing organizations.

To encourage collaboration within and outside the University, ORSP launched an Expertise Profile System (EPS) in 2008 with enhanced features to promote collaboration among researchers and to provide readily accessible information on research expertise, research centers, technologies and patents, and research facilities. EPS, reachable through the ORSP website, is a searchable repository containing expertise profiles of all faculty and professional staff on the UTEP campus. Faculty and research staff edit their own profiles to keep their research interests and professional profiles current. The profiles allow the University to showcase faculty and staff members’ research and expertise in a way that is systematic and accessible to both external funders and potential collaborators inside and outside of UTEP. EPS markedly increases off-campus awareness of UTEP’s research capacity, and provides links to a network of researchers at other institutions in Texas.

To incentivize faculty to work in collaborative research projects, the University has instituted a Multiple Credit Sharing Policy that addresses assignment of credit and investigator incentive return to all PIs and co-PIs, departments, colleges, and centers in multiple PI awards.
Growth Plan for Enhancing Collaboration

Over the next five years, UTEP plans to double the number of collaborative proposals with funding of at least $1 million per year. To do so, the University must first identify large-scale proposals that align with strategic directions in which UTEP has established expertise and a record of performance. Once opportunities have been developed, ORSP will provide seed money to build strategic collaborations and obtain initial results. Potential collaborators will be encouraged to engage with UTEP research centers, as well as with academic departments and colleges. Mechanisms described above (e.g., CFMP, lecture series, round table discussions) and other networking venues will be used to build collaborations. Faculty who collaborate on proposals will be recognized for their contributions. The Multiple Credit Sharing Policy described above is an excellent first step, but clear guidelines must be defined to reward collaboration, including policies for tenure and promotion.
New Faculty

Faculty Hiring Process

Although the number of faculty hires authorized for a given area has traditionally been determined by enrollment growth and the funding available from vacancies created by retirements and departures, and from new allocations of faculty salaries, UTEP’s efforts to achieve national research university status will require greater coordination to ensure that hiring decisions reflect research and doctoral program priorities. Such strategic hires have occurred during the past several years as UTEP developed new doctoral programs and research directions; over the past five years, UTEP has made 11 such strategic hires.

One aspect of faculty hiring at UTEP has changed dramatically over the past ten years. Start-up packages, which are typically negotiated by deans, have become a critical component of UTEP’s competitiveness in recruiting outstanding faculty candidates, and the size and complexity of these start-up packages have grown considerably, ranging from a few thousand to a million dollars in value. To achieve this level of competitiveness, UTEP has also benefited greatly from the availability of start-up funding from the UT System STARS program and the State of Texas’ Emerging Technology Fund.

Growth Plan for New Hires

UTEP currently has 508 tenured and tenure-track faculty and expects to grow this number to 720 within the next decade. At least a third of the new faculty hires over this period are expected to be associate and full professors who have the track record to contribute immediately to the strategic areas that are expected to bring research and doctoral program prominence to the University. To recruit such faculty, UTEP will develop a systematic, data-driven process that involves faculty, chairs and deans in the identification of strategic areas for new hires. The University will proactively identify and aggressively recruit faculty members who are well matched to UTEP’s mission and strategic priority areas. The University’s Centennial Campaign (see Section VI) offers an unprecedented opportunity to secure funding for endowed chairs and professorships that will help attract strategic hires. Funding available from the STARS and ETF programs and from federal infrastructure grants will also be used to support strategic hires and to provide competitive start-up packages for new researchers. Through these and related strategies, UTEP expects by 2015 to increase by 25% the number of research-active faculty who are nationally competitive in acquiring external funding.
Faculty Development: Summary of Goals, Objectives, and Strategies

The goals, objectives and strategies summarized in Table V-1 reflect the plans to address faculty development. Unless otherwise noted, the objectives are to be achieved by FY2020.

Table V-1: Summary of Goals, Objectives, and Strategies for Faculty Development

| Goal 1: Improve the productivity, innovation, and effectiveness of research faculty |
|-----------------------------------|--------------------------------|--------------------------------|
| Objectives                        | Strategies                      | Measures                        |
| Increase by 20% the number of research-active faculty who receive external funding | Create synergistic opportunities for faculty (within and outside UTEP) to interact, e.g., round table discussions and think tank sessions | Comparison with baseline and peer institution data: |
|                                  | Establish a consistent research mentoring approach across the University with defined roles for mentors and mechanisms for accountability. Build on existing efforts to increase the number of early career awards | Research grants submitted, rating of grants (random sample), and grants awarded |
|                                  | Strongly encourage more internal and external review of proposals and scholarly work, including extending the effective writing circles concept across campus | Research expenditures per faculty member |
|                                  | Define strategies and policies that promote the holistic integration of research and education through planning and evaluation processes for units and faculty | Research expenditures by priority and visibility areas |
|                                  | Increase number of post-doctoral and doctoral students funded | Funded doctoral and post-doctoral students |
|                                  | Track faculty involvement in mentoring, proposal review, and writing circle initiatives, as well as outcomes | Faculty satisfaction with research support (via surveys administered every 3 years) |
Table V-1 (cont.)

| Goal 2: Establish an environment that promotes recognition of faculty achievement |
|---|---|---|
| **Objectives** | **Strategies** | **Measures** |
| Double the number of faculty who receive national, state and international recognition, including National Academy membership | Mentor and nominate faculty for national and state awards | Comparison with baseline (and peer institution data if applicable): |
| | Establish a Faculty Recognition Committee that identifies and nominates outstanding faculty for state, national, and international recognition | Number of faculty recognition nominations |
| | Launch an aggressive marketing campaign that promotes the research, education, creative production, and scholarly work of UTEP faculty outside the University. | Number of recognition awards disaggregated by type |
| | | Track media exposure of UTEP faculty. |

| Goal 3: Promote collaborations within and outside the institution |
|---|---|---|
| **Objectives** | **Strategies** | **Measures** |
| Double the number of collaborative proposals with funding of at least $1 million per year | Identify large-scale proposals that align with strategic directions in which UTEP has established expertise and a record of performance | Comparison with baseline data: |
| | Provide seed money through ORSP to build strategic collaborations and obtain initial results | Number of events hosted on campus to establish collaborations; Number of collaborative grant proposals submitted |
| | Engage potential collaborators with research centers | Number of collaborative grants awarded |
### Table V-1 (cont.)

**Goal 4: Recruit faculty who can build areas of recognition at the University**

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<th>Objectives</th>
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<td>Increase by 25% the number of research-active faculty who are nationally competitive in securing external funding.</td>
<td>Develop a systematic, data-driven process that involves faculty, chairs and deans in identifying strategic areas that will be targeted. Proactively identify and aggressively recruit faculty that fit UTEP’s mission and strategic research areas. Continue to compete aggressively for external funding available from the STARS, ETF and other program sources to enhance new faculty recruitment. Raise private fund-raising levels for endowed faculty chairs and professorships via the Centennial Campaign. Continue to provide competitive start-up funds for new researchers.</td>
<td>Comparison with baseline data and peer institution data: Number of proposals submitted by and grants awarded to new faculty. Number of strategic hires; rank of hires; and areas to which they contribute. Number of endowed chairs and professorships.</td>
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<th>Objectives</th>
<th>Strategies</th>
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<td>Increase the number of endowed faculty chairs from 14 to 24 and endowed professorships from 41 to 168 through the Centennial Campaign. At least one third of new hires will be senior faculty who support areas of recognition, emerging strengths, and new doctoral programs.</td>
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### Student Development: Current Status

UTEP’s quest to become the first national research university with a 21st century student demographic means that we have made a commitment to pursue this Tier One goal for and with the students we serve, not in spite of them.

This commitment rests on a strong foundation of student development initiatives to ensure that UTEP’s largely first-generation and low-income students have the same opportunities as their peers in more affluent settings to reach the highest levels of academic attainment. As described in Section III, there are many such initiatives on the UTEP campus, and most are driven by student success assessment data which determine their effectiveness and contribute toward their continuous improvement. These initiatives range from merit scholarships for our highly talented undergraduates, to research opportunities for undergraduate students, to
mentoring undergraduate students toward graduate programs, either at UTEP or other national research universities.

We also recognize UTEP’s responsibility to serve as a major contributor to the national pool of Hispanic doctoral degree recipients, especially in STEM fields, who will become the next generation of faculty members at universities across this country.

Although more work must be done, UTEP has already established a position of national leadership in moving students successfully along this pathway:

- 40% of UTEP graduating seniors report experience in on-campus research, scholarly or creative arts projects with UTEP faculty for a purpose other than a grade; 73% of them plan to attend graduate school; and 28% plan to re-enroll at UTEP.
- UTEP ranks 3rd across all disciplines nationally in graduating Hispanic students at the baccalaureate level and 6th across all disciplines at the graduate level.
- UTEP ranks 6th nationally among baccalaureate institutions from which Hispanic students go on to complete doctoral degrees (see Table IV-1)

Student Awards

Undergraduate Scholarships
Merit-based scholarships represent a critical dimension of UTEP’s strategy to recruit and retain highly talented students at the undergraduate level. Such scholarships are valuable both in providing financial support for a largely low-income student population, and equally importantly in validating and motivating students with the financial investment being made in them by the successful people who are their scholarship donors. Today, UTEP undergraduates receive almost $8 million per year in merit scholarships. These funds come from a wide range of local, national, and international sources of support, including ADELANTE! U.S. Education Leadership Fund, Academy of Applied Science,

UTEP will continue to be aggressive in seeking additional merit scholarship support for undergraduate students, both to address the rising unit cost of tuition and fee-based scholarships and to increase the total number of students who receive scholarship support. An especially timely opportunity to increase available scholarship funds is offered by UTEP’s Centennial Campaign associated with the celebration of the University’s 100th anniversary in 2014. New endowments to support merit scholarships for undergraduate students will be a priority.

**Undergraduate Research**

UTEP has distinguished itself from other universities in developing a robust undergraduate research experience program, especially in the Colleges of Science and Engineering. Such experiences have become a major contributor to quality enhancement in undergraduate education at UTEP. They have also proved to be the single strongest predictor of UTEP undergraduates’ future graduate school enrollment. In FY 2009, 791 undergraduate students were employed on campus with support from externally funded grants, and 610 undergraduate students received stipend support from research/training grants.

Support for UTEP undergraduates’ active involvement in research groups comes from the National Science Foundation (Research Experiences for Undergraduates-REU, Louis Stokes Alliance for Minority Participation-LSAMP, and Bridges to the Doctorate programs), the National Institutes of Health (Research Initiative for Scientific Enhancement-RISE and Minority Access to Research Careers-MARC programs), and many other sources. In addition, the Affinity Research Group model, developed at UTEP, provides a framework and pedagogy that enable faculty to create and sustain a cooperative environment that explicitly develops skills that will enable students to succeed in research, academe, and the workforce. Through these and many similar efforts, UTEP provides a quality undergraduate education that prepares students for research careers and fosters increasing diversity and minority representation in all STEM fields. Additionally and
importantly, students develop skills and have experiences that strengthen their application packages for competitive graduate fellowships.

Although UTEP already offers exemplary programs to support undergraduate research, there are plans to increase the number of students involved in undergraduate research by extending the number of REU sites on campus and increasing the number of UTEP students who apply for REU summer experiences at other institutions. Developing a research plan, learning how to set clear goals and objectives, and writing and presenting scholarly work lay the groundwork for submitting competitive applications for fellowships, scholarships, and awards. Additional strategies include GRE preparation courses offered on campus and organized critical review of essays associated with applications.

Graduate Student Awards
In FY 2009, graduate students at UTEP received more than $13 million in funding in the form of scholarships, stipends, research and teaching assistantships, as well as financial aid. These funds helped support 61% of the doctoral students and about 45% of the Masters students enrolled during the year.
In addition to UTEP-funded fellowships, the University’s graduate students have received recognition through the award of funds from foundations and corporations. Some of these organizations include: KPMG Foundation; Federal Reserve Bank of Dallas; Society of Exploration Geophysicists; Geological Society of America; National Science Foundation; Hispanic College Fund; U. S. Department of Transportation; International Road Federation; Texas Space Grant Consortium and Aviation and Space Foundation of Texas; Department of Homeland Security; Department of Defense; National Institutes of Health, including National Institute of Drug Abuse and the National Institute of Mental Health.

UTEP’s graduate students also receive acknowledgements of their achievements through other types of awards. Research awards, including funds and internships, or opportunities to work in national laboratories, have been awarded to students by the American Physical Society, American Meteorological Society, National Institutes of Health, Centers for Disease Control, Sandia National Laboratories, Oak Ridge National Laboratory, Lockheed Martin, Texas Instruments, International Academy of Business and Public Administration, Hispanic Health Disparities Center, and the Army Civilian Training, Education, and Development System. Awards for best academic papers and presentations have been bestowed on UTEP graduate students by organizations such as the American Society for Cell Biology, the American Society of Mechanical Engineers, and the Academy of International Business.

Several of UTEP’s graduate students have received unique national awards. One student was selected by the National Science Foundation to attend the 59th meeting of Nobel laureates. Another student was appointed to the Department of Health and Human Services Committee on Health Promotion and Disease Prevention for 2020. The National Association for Development Education has given its Outstanding Dissertation Award to a UTEP doctoral student. UNESCO and Daimler awarded a UTEP student the Bronze Mondialogo Engineering Award. Graduate students in the creative arts have had work accepted at national juried competitions, and creative writing students have won both national and international writing awards, including the National Mexican Prize for Young Novelists.
UTEP’s Graduate School will continue to focus on identifying sources of competitive financial awards for graduate students, including awards to doctoral students who are completing their dissertation research and writing. UTEP’s Centennial Campaign has specifically targeted graduate fellowships in areas of strategic importance, and the early response of donors confirms that this will be a very productive fundraising priority. Moreover, as part of UTEP’s development as a national research university, and as part of its commitment to enhance graduate student competitiveness for national and international awards, the Graduate School is in the process of creating a Center for Professional Development for graduate students. Components of this center will include the following:

- workshops and seminars on writing skills, research skills, teaching preparation, and a variety of topics related to navigating higher education pathways to professional success;
- student services, including online and face-to-face writing assistance; career services for those who will enter the professoriate; academic presentation assistance;
- special conferences, including those on Preparing Future Faculty and Preparing for Post-Doctoral Work;
ongoing major initiatives, such as a mentoring program, writing circles, and “Creating Community,” a social support program to enhance student retention.

Some of these components are already in use, with existing funds. Others have been written into a grant proposal currently under review by the National Science Foundation.

Diversity

Context

UTEP is poised to become the first national research university that is actually serving the 21st century demographic of its state and of the United States. The U.S. Census Bureau predicts that one-third of all Americans in 2050 will be Hispanic. Hispanics are the fastest growing population group in Texas, projected to outnumber Whites by 2020 and to constitute more than 52% of the state’s population by 2040. Yet disparities in educational attainment and representation for Hispanics prevail and are projected to persist well into the future at both national and state levels. Two sets of statistics illustrate the scale of the challenges:

- Nationally, in terms of educational attainment by ethnicity: in 2008, among those individuals over 25 years of age in the U.S. only 9.4% of Hispanics had earned a bachelor’s degree, compared with 19.4% of Whites. The relative disparity widens up the educational ladder from baccalaureate to doctorate. At the graduate level: only 2.9% of Hispanics held master’s degrees, compared with 7.6% of Whites; and only 1.0% of Hispanics held doctoral degrees, compared with 2.8% of Whites.

- In Texas, in terms of Hispanic representation in higher education: in July 2007, almost 36% of the State’s population was Hispanic; however, in fall 2006 Hispanics had only accounted for 28.4% of public college and university enrollment. Moreover, the Comptroller’s projections show Hispanics only comprising 44.2% of public college and university enrollment by 2040, which would be far lower than projections of over 52% for the Hispanic share of the overall Texas population.

12 Texas in Focus: A Statewide View of Opportunities, Office of the Texas Comptroller of Public Accounts, January 2008
To put the last statistics in perspective with regard to UTEP’s unique position in serving the 21st century demographic in Texas: in Fall 2009, 79.8% of UTEP’s undergraduates, 59.8% of the graduate student population, and 41% of the doctoral student population were Hispanic.

UTEP and other institutions that serve large numbers of Hispanic students are educating the future leadership of this country in a variety of fields and disciplines (see Table V-2).

One of the main responsibilities of national research universities is to prepare the researchers, scholars and faculty who will join the professoriate at major research universities of Texas and across the nation. Graduates of our programs will become faculty members and role models, and they will be at the forefront of the new generation of college-educated and doctorally-qualified Hispanic citizens.

Current Status

UTEP has a long record of successful participation in federal programs that

<table>
<thead>
<tr>
<th>Table V-2: UTEP’s National Ranking in Degrees Awarded to Hispanics, 2009</th>
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</thead>
<tbody>
<tr>
<td><strong>Baccalaureate</strong></td>
</tr>
<tr>
<td>2nd Engineering</td>
</tr>
<tr>
<td>2nd Physical Sciences</td>
</tr>
<tr>
<td>2nd Mathematics &amp; statistics</td>
</tr>
<tr>
<td>3rd All Disciplines (total)</td>
</tr>
<tr>
<td>3rd Health Professions &amp; Clinical Sciences</td>
</tr>
<tr>
<td>3rd History</td>
</tr>
<tr>
<td>3rd Biological &amp; Biomedical Sciences</td>
</tr>
<tr>
<td>5th Business, Management, Marketing</td>
</tr>
<tr>
<td>5th Foreign Languages, Literatures, Linguistics</td>
</tr>
</tbody>
</table>
enhance opportunities for minority students to enter and graduate from doctoral programs. The Alliance for Graduate Education and the Professoriate (AGEP), which was funded by NSF 2003-2008, has enabled UTEP to enrich the academic experience of Hispanic doctoral students. Through a partnership with Howard University, doctoral students at UTEP have had access to seminars, workshops and similar activities related to academic writing and a variety of issues to help prepare them for university or research laboratory careers. They have been able to attend Post-Doctoral Institutes and Preparing Future Faculty Institutes, supported by the AGEP grant, as well as retreats and other activities. Additionally, the program provided monitoring of student progress and developed interventions for doctoral students experiencing academic difficulties. All of these academic enhancement programs have helped doctoral students improve their research and writing skills and progress to attain faculty and research positions. Of the 29 students who started the program, 9 students have graduated and all but one of the others continues working toward completion of their doctoral degrees. Many of the practices initiated by this project have been institutionalized in the UTEP Graduate School.

Two other University programs have been funded through competitive national awards. The “Bridges to the Doctorate” program at UTEP, also funded by the National Science Foundation, selects minority Master’s students for academic enrichment activities, and enhances their interest in applying to doctoral programs. And the NSF’s Louis Stokes Alliance for Minority Participation funds undergraduate research experiences to foster students’ interest in pursuing graduate degrees.

An example of a collaborative, discipline-focused graduate recruitment effort at UTEP is the NSF-funded Computing Alliance of Hispanic-Serving Institutions (CAHSI). This consortium of ten Hispanic-Serving Institutions is focused on the recruitment, retention, and advancement of Hispanics in computing.

UTEP encourages its own undergraduate students to pursue graduate study at UTEP in a variety of ways, including the following:

- The Dean of the Graduate Schools sends letters to all undergraduate graduates, with a grade point average of 3.0 and above, encouraging them to pursue graduate study at UTEP.
- Graduate expos are held on campus each semester, featuring only UTEP graduate programs.
- A reception is held at the President’s residence, honoring UTEP undergraduate honors students.
- GRE preparation sessions and courses are offered to UTEP students.
• Visitations are held by UTEP, inviting undergraduate students from other universities to the campus for several days.

• The Graduate School provides financial support to undergraduate conferences held on the UTEP campus, and provides a table with staff and informational material. Students from UTEP and other universities attend these conferences.

Finally, the NSF-funded (2003-2009) ADVANCE Institutional Transformation Grant provided critical feedback from Latina faculty in the sciences and engineering at UTEP about their pathways to doctoral programs. The findings, which have been incorporated into Graduate School planning, include the need to communicate social support in a variety of programs and activities, e.g. writing circles, workshops, seminars, and the importance of using personal stories to inform, inspire and motivate potential graduate students (see Table V-3).

Plan for the Future

UTEP’s plan for doctoral student recruitment builds on the successes of its past. Hispanic doctoral student enrollment at UTEP increased from 75 in 2002 to 194 in 2009. Since 2007, UTEP has enrolled more doctoral students each year than any of the other six emerging research universities in Texas, despite the fact that the other universities’ total doctoral enrollments are considerably larger than UTEP’s. In some cases, the number of Hispanic doctoral students at UTEP is two to five times greater than those at other institutions (see Table V-3).
### Table V-3: 2009 Doctoral Enrollment, Percentage Hispanic

<table>
<thead>
<tr>
<th>University</th>
<th>Percentage Hispanic</th>
</tr>
</thead>
<tbody>
<tr>
<td>The University of Texas at El Paso</td>
<td>41%</td>
</tr>
<tr>
<td>University of Texas at San Antonio</td>
<td>22%</td>
</tr>
<tr>
<td>University of Houston</td>
<td>8%</td>
</tr>
<tr>
<td>Texas Tech University</td>
<td>8%</td>
</tr>
<tr>
<td>University of North Texas</td>
<td>6%</td>
</tr>
<tr>
<td>The University of Texas at Arlington</td>
<td>4%</td>
</tr>
<tr>
<td>The University of Texas at Dallas</td>
<td>4%</td>
</tr>
</tbody>
</table>

What is even more striking is the proportion of doctoral students who are Hispanic at the various emerging research universities in Texas (see Figure V-1). At UTEP, Hispanics make up 41% of the total doctoral enrollment and the proportion is rising. At UT San Antonio it is 22% and falling. At Houston, Texas Tech, and North Texas it is 6-8%, and at UT Dallas and UT Arlington it is less than 5%. Given the importance of a Hispanic professoriate in raising aspirations of Hispanic undergraduate and graduate students, this is not a gap that is going to be closed significantly at more than one or two institutions in Texas.
Over the next decade, UTEP expects to increase its success in enrolling Hispanic doctoral students. In summer 2009, the Graduate School developed a comprehensive plan for the recruitment, retention, and graduation of doctoral students. A key element was the appointment of a new associate dean for recruitment and retention with a strong background in diversity development within graduate student populations (Dr. Benjamin Flores, Professor of Electrical and Computer Engineering; see Section I.).
UTEP’s plan to recruit a diverse student body into UTEP’s doctoral programs focuses on three major strategies:

1. To engage our own undergraduate students in research and scholarly work with faculty mentors and to develop the students’ awareness of, aspirations and preparation for successful applications to top graduate programs, including our own. A culture of expectation for graduate degree attainment creates its own momentum, and we already see that in the success of our undergraduate research initiatives. There are important groups who remain underrepresented in our graduate and doctoral populations and our national grant experience is a rich source of best practices, mentoring, and role models – for example the importance of lessons learned through our ADVANCE program in supporting our efforts to increase recruitment of women in STEM disciplines.

2. To target institutions across Texas, the rest of the Southwest, and selected cities across the country with large Hispanic populations. We are focusing this effort on institutions which lack doctoral degrees in areas of strength at UTEP and where we can establish an ongoing relationship that could help build a pathway to UTEP. This outreach involves administrative initiatives and a great deal of faculty-to-faculty connection, so that students can learn about the commitment to and successful experience of UTEP faculty in working with students just like them. UTEP has built a reputation for strong research programs and supportive faculty and staff who are dedicated to helping students attain their goals of earning doctoral degrees and becoming members of the professoriate. In addition, UTEP’s location in a predominantly Hispanic community is often appealing to Hispanic students from other parts of the U.S.

3. To reach out to Hispanic and non-Hispanic students who might be interested in the special opportunities of graduate work in a bilingual/bicultural setting on the U.S.-Mexico border. That setting has enabled us to build programs of excellence in particular areas of concentration – such as Borderlands History, Psychology and the Law, Environmental Science, and Hispanic Health Disparities – whose intellectual attraction applies to students of all ethnicities, just as the general composition of the campus attracts students within and outside the Latino culture.
Strategies in the recruitment plan include sponsorship of, and attendance at, graduate expos, undergraduate institution visitations, recruiting visits to selected universities in Texas as well as the western and southwestern parts of the U. S. and selected cities nationally. There will be targeted informational campaigns in selected media markets.

In addition to current and planned measures to recruit Hispanic students to UTEP, the Graduate School has initiated a plan to retain and graduate UTEP’s Hispanic doctoral students. The plan focuses on information students need when pursuing a doctoral degree, relevant academic enrichment activities, and career enhancement programs. From their first day at UTEP, doctoral students are treated as future members of the professoriate and receive preparation for doctoral comprehensive examinations, research and writing skills development, and preparation to become successful teachers at the college or university level. In coordination with the Graduate School, UTEP’s doctoral programs will incorporate best practices learned from the ADVANCE program, the Computing Alliance of Hispanic-Serving Institutions, and other NSF-funded UTEP programs, to recruit and retain doctoral students.

Student Development: Summary of Goals, Objectives, and Strategies

UTEP has gained prominence for its efforts in recruiting, progressing, and successfully graduating students through all stages along the educational pathway.

Table V-4 summarizes the goals, objectives, and strategies to increase student awards and enhance student diversity, with quantitative measures extended over the decade through 2020.
## Table V-4: Summary of Goals, Objectives, and Strategies for Student Development

**Goal 1: Increase the number of undergraduate and graduate student research awards.**

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Strategies</th>
<th>Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Undergraduate:</strong> Increase the number of competitive funding awards to UG students by 15%</td>
<td><strong>Undergraduate:</strong> Create faculty mentoring program for undergraduate students</td>
<td><strong>Undergraduate:</strong> Comparison with baseline data: Number of students funded to participate in UG research</td>
</tr>
<tr>
<td></td>
<td>Achieve funding goals in the Centennial Campaign for merit-based undergraduate scholarships</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Create calendar of professional development activities for undergraduates</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Secure travel funds to academic conferences</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Promote participation in SACNAS and other local, regional and national academic societies and organizations</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Create undergraduate research awards within disciplines or departments</td>
<td></td>
</tr>
</tbody>
</table>
Goal 1: Increase the number of undergraduate and graduate student research awards.

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Strategies</th>
<th>Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Graduate:</strong></td>
<td><strong>Graduate:</strong></td>
<td><strong>Graduate:</strong></td>
</tr>
<tr>
<td>Increase doctoral stipends to remain</td>
<td>Reallocate resources to provide sufficient</td>
<td>Comparison with baseline data:</td>
</tr>
<tr>
<td>competitive with other research universities (See Section VI)</td>
<td>funds for doctoral stipend increases</td>
<td>Annual comparison of departmental stipends</td>
</tr>
<tr>
<td>Increase the amount of travel funding</td>
<td>Reallocate resources to provide sufficient</td>
<td>Number of travel funding applications received &amp; awarded.</td>
</tr>
<tr>
<td>available for doctoral students to attend</td>
<td>funds for annual travel awards</td>
<td>Average amount of travel funding awarded</td>
</tr>
<tr>
<td>conferences</td>
<td>Reallocate resources to provide additional</td>
<td>Number of dissertation fellowship applications received &amp; awarded.</td>
</tr>
<tr>
<td>Increase the number of dissertation</td>
<td>fellowship opportunities</td>
<td>Average amount of dissertation fellowships</td>
</tr>
<tr>
<td>fellowships awarded to doctoral students</td>
<td>Reallocate resources to provide additional</td>
<td>awarded</td>
</tr>
<tr>
<td>Increase the amount dissertation</td>
<td>research funding for doctoral students</td>
<td>Number of dissertation research funding</td>
</tr>
<tr>
<td>research support available to doctoral</td>
<td></td>
<td>applications received &amp; awarded</td>
</tr>
<tr>
<td>students</td>
<td></td>
<td>Average amount of dissertation research</td>
</tr>
<tr>
<td>Achieve Centennial Campaign funding goal</td>
<td></td>
<td>support awarded</td>
</tr>
<tr>
<td>for graduate fellowships</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


## Goal 2: Increase undergraduate and graduate student research involvement and activity.

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Strategies</th>
<th>Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Undergraduate:</strong> Increase the number of UG students involved in faculty research by 20%</td>
<td><strong>Undergraduate:</strong> Submit competitive proposals for REU sites</td>
<td><strong>Undergraduate:</strong> Number of UG students who apply for REU opportunities</td>
</tr>
<tr>
<td>Increase the number of UG students applying to graduate school by X%</td>
<td>Increase the number of REU student applications</td>
<td>Number of UG students who participate in REU opportunities</td>
</tr>
<tr>
<td>Increase UG student preparation for graduate school and research careers</td>
<td>Organize sessions for students and faculty mentors to develop research plans to prepare for competitive proposal applications</td>
<td>Number of UG students who work with faculty mentors</td>
</tr>
<tr>
<td></td>
<td>Increase awareness of faculty mentors of the importance of publishing with students</td>
<td>Number of UG students who participate in conference presentations with faculty mentors</td>
</tr>
<tr>
<td></td>
<td>Publicize GRE preparation exam workshops</td>
<td>Number of UG students who have joint publications with faculty mentors</td>
</tr>
<tr>
<td></td>
<td>Provide critical review of essays associated with applications</td>
<td>Number of UG students who participate in GRE preparation courses</td>
</tr>
</tbody>
</table>
Goal 2: Increase undergraduate and graduate student research involvement and activity.

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Strategies</th>
<th>Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduate:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increase Graduate student participation in professional conferences</td>
<td>Increase number of Graduate School workshops on writing conference papers</td>
<td>Comparison with baseline data:</td>
</tr>
<tr>
<td>Increase Graduate student participation in publications with faculty</td>
<td>Establish formal mentoring program in research writing skills</td>
<td>Number of travel funding applications received</td>
</tr>
<tr>
<td>Enhance Graduate student preparation for research careers</td>
<td>Increase number of workshops for graduate students on research writing skills</td>
<td>Number of articles published in refereed journals with doctoral students as co-authors</td>
</tr>
<tr>
<td></td>
<td>Increase Graduate School-sponsored set of workshops on preparing for research careers</td>
<td>Number of doctoral students attending research-focused workshops</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Number of doctoral graduates who accept research positions at national labs and other research institutes/organizations</td>
</tr>
</tbody>
</table>
### Goal 3: Recruit and Retain Doctoral Students from Underrepresented Groups

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Strategies</th>
<th>Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase the number of UTEP UG students who apply and enroll in UTEP graduate programs by 20%</td>
<td>Increase the compensation for funded doctoral students</td>
<td>Comparison with baseline data:</td>
</tr>
<tr>
<td>Increase the number of Hispanic students enrolled in doctoral programs by over 10% per year</td>
<td>Implement new strategies for recruitment and retention as initiated by the Graduate School</td>
<td>Fall and spring monitoring of enrollments</td>
</tr>
<tr>
<td>Increase the number of women enrolled in STEM doctoral programs by over 10% per year</td>
<td>Incorporate best practices related to recruitment and retention, as observed in AGEP, ADVANCE, CAHSI, Bridge to the Doctorate, and other NSF programs</td>
<td>Total number of funded doctoral students per year</td>
</tr>
<tr>
<td>Increase the number of Hispanic doctoral graduates by 20% per year</td>
<td></td>
<td>Identification of enrollments and graduates by gender and ethnicity throughout the institution, in STEM departments, and in SBE departments</td>
</tr>
<tr>
<td>Increase the number of Hispanic doctoral graduates in STEM departments by over 20% a year</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increase the number of Hispanic doctoral graduates in SBE departments by 20% a year</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Previous sections of this plan present a number of key strategies and resources that will be required to support UTEP’s quest to become a national research university. These follow the structure of the Guidelines for the Plan and include: faculty recruitment and retention; doctoral program development and implementation; doctoral student recruitment, preparation and acceleration towards graduation; and research infrastructure development.

This Section identifies other resource considerations that will also be critical to UTEP’s progress towards a national research university: campus facilities, library resources, and competitive support for graduate students, all of which are also requested in the Guidelines. To them, we have added our own sub-sections on regional partnerships and UTEP’s Centennial Campaign – resource considerations that are unique to our time and place but are no less vital to our progress and prospects than everything else described herein.

Campus Facilities Expansion

The University of Texas at El Paso occupies approximately 1.7 million net assignable square feet (NASF) of space in Bhutanese-style facilities on a campus of 414 acres in high Chihuahuan desert terrain.

The distinctive beauty and functionality of the campus have become a major asset to the quality of life of those who study and work at UTEP and to the recruitment
of new faculty and graduate students. There are few university campuses whose architectural signature has been so successfully sustained over nearly 100 years, in an unusual marriage of the tranquil beauty of ancient Himalayan temples and 21st century technologies and research laboratories.

During the past 15 years, UTEP has engaged in significant facilities expansion, especially in science and engineering, with funding from tuition revenue bonds (TRBs) from the Texas Legislature and Permanent University Fund (PUF) bonds from The University of Texas System, along with grants from federal, foundation and private philanthropic sources.

UTEP’s facilities master plan has long charted a course for the systematic development of state-of-the-art facilities that would raise students’ and the institution’s self-confidence, aspirations, and achievement. With limited capital funding, however, this process started slowly. One of the first major breakthroughs was the construction of a 140,000 GSF Undergraduate Learning Center (UGLC), funded by the Texas Legislature as part of its “South Texas Border Initiatives” response to claims of historic under-investment in universities along the Texas-Mexico border, including UTEP. For UTEP, this special appropriation funding provided $33 million to construct the large UGLC classroom and
laboratory facility equipped with state-of-the-art teaching and learning technology, and to renovate existing space in the Physical Science building and other campus facilities.

During the past five years, there has been rapid and significant growth in the level of infrastructure investment at UTEP. Examples included in this section elucidate UTEP’s deliberate and strategic preparation for the growth and development of its research agenda, beginning with the completion of the Bioscience Research Building and culminating with the current state of construction on the UTEP campus.

In 2005, UTEP leveraged state and federal funding to complete a $45 million, 140,000-GSF Bioscience Research Building, a five-story structure that houses the Border Biomedical Research Center (BBRC), supported by the Research Centers in Minority Institutions (RCMI) program of the National Center for Research Resources of NIH. The Bioscience Research Building includes animal research facilities, two Biosafety Level 3 laboratories, and several high-end core laboratory technologies designed to provide high-throughput and screening results supporting research associated with major health problems relevant to the U.S.-Mexican border. The overall structure of the building was designed as an “open-lab” concept to provide a unique and collaboratively rich research environment. UTEP’s researchers are utilizing this facility to address four biomedical areas:

1. infectious diseases,
2. toxicology,
3. neurological and metabolic disorders, and
4. cancer and immune biology.

The facility has supported seminal health and biomedical research with outstanding research faculty and multidisciplinary teams that integrate basic research with translational endpoints, allowing the transition of bench discoveries to be applied within a clinical setting. This facility has already proven critical to advancing UTEP’s health and biomedical research supporting a large portion of UTEP’s research portfolio, contributing to several patents and biotechnology start-ups, and educating a significant number of doctoral degree graduates who can meet the demanding needs of the region and nation.

Since 2007, UTEP has been engaged in the largest construction and renovation program in its history, with a focus on upgrading science, health science, and engineering facilities across the campus, and completely transforming research and
teaching space in these high-priority areas. With a total investment of nearly $250 million, construction is underway on three major projects, including the construction of two large new buildings, one to accommodate the Chemistry and Computer Science departments and the second for the College of Health Sciences and the School of Nursing, as well as a major renovation and upgrade of existing engineering and science facilities in the center of the campus.

The new $70.2-million, 140,000 GSF Chemistry and Computer Science Building will provide researchers and students with expanded and upgraded classroom and laboratory space for their fast-growing research and education programs. Funded with Tuition Revenue Bonds from the Texas Legislature and Permanent University Fund bonds from the UT System, this state-of-the-art facility is scheduled to be completed in 2011. Combining the two disciplines in a single facility is expected to foster collaborations and stimulate innovation in such areas as computational chemistry, computational science, materials, and environmental science and engineering. The building will be equipped with the following state-of-the-art core facilities: cryo-electron microscopy, atomic and emission spectroscopy, mass spectrometry, phyto-remediation, and nuclear magnetic and electron paramagnetic resonance, among others. The building will also house computer laboratories designed to support collaborative research environments, including such areas as reconfigurable networks, robotics, high-end computing, human-computer interaction, and large social networks simulations. 100 percent of the current Computer Science faculty are already engaged in sponsored research and Chemistry faculty are following the same trend with nearly 70 percent. The synergy that will be generated in this new building is expected to yield innovative research capacity-building.

The $60 million, 135,000 GSF College of Health Sciences/School of Nursing building will relocate much of the College of Health Sciences and the School of Nursing to the UTEP main campus. $50 million of this project was provided by the UT System Board of Regents from the Permanent University Fund (PUF), and the remainder came from private sources. The new building will house classrooms, faculty offices, health science research laboratories and research laboratories to enhance the preparation of new health care
professionals. It will house: modular bench research laboratories; dedicated areas for immunology, infectious diseases, clinical chemistry, immunochemistry and nutrition research; and dedicated facilities for such activities as tissue culture, microbiology, and nutritional analysis. Furthermore, a metabolic and cardiopulmonary research area will include facilities for specimen collection, determination of percent body fat through underwater weighing and air displacement plethysmography, bone densitometry, metabolic testing, exercise capacity and pulmonary function testing, and an environmental temperature regulation chamber. We anticipate that the new building location will allow for an expansion of collaborative health science research through enhanced proximity to bioscience researchers and the existing core facilities in the Biosciences Building. In addition, the four Rehabilitation Sciences graduate programs and the Cooperative Pharmacy program will benefit from expanded facilities in the existing Campbell St. building, much of which will be re-purposed and dedicated to clinical rehabilitation and pharmacy medication management research.

Finally, a number of large-scale renovation projects will upgrade existing science and engineering spaces and facilities to create a state-of-the-art nanotechnology facility, space for a biomedical institute (addressing the interfaces of Engineering, Biomedicine and Computational Sciences), a research and academic data center, an engineering design studio, as well as expansion for two technology-based research centers:
The 3,000 square-foot Nanotechnology Fabrication Center will provide a sterile and clean core facility where students and researchers will work with nanomaterials characterization and fabrication technologies.

With state-of-the-art wet and dry labs, the Biomedical/ Bioinformatics Annex will support faculty and students engaged in the studies of biomaterials, tissue engineering, bioinformatics and health care delivery.

The Research and Academic Data Center will house the University’s high-performance computing equipment for research requiring large-scale complex systems.

The multidisciplinary W.M. Keck Center for 3-D Innovation will expand to support research that investigates and pilots future generations of electronic devices using emerging rapid-manufacturing technologies.

The renovation also addresses the needs of the Center for Space Exploration and Technology Research in support of research on future propulsion technologies and clean and alternative fuels energy.

The Engineering Design Studio will allow faculty and students to work on complex real-world projects from design through manufacturing.

Space Projections and Plans

UTEP’s projections, based upon the Texas Higher Education Coordinating Board Space Projection Model, indicate that the University will need to add approximately 1.9 million net assignable square feet (NASF) to support the predicted student enrollment and research growth described in Sections I, II and III. Specifically, the space projection model predicts a space need, by space type, as follows:

- Instructional Space 586,550 sq. ft.
- Office Space 498,489 sq. ft.
- Research Space 395,864 sq. ft.
- Library 213,654 sq. ft.
- Support Space 193,925 sq. ft.

An analysis of the nature and type of space required indicates that the estimated cost of this additional space, in current dollars, would be between $800 and $850 million. It is important to note that this analysis, as well as the THECB projection model, relates only to educational and general space which includes the categories listed above. It does not include auxiliary space such as housing, parking etc. that would be supported directly from the operating revenue of those operations.
The two major construction projects that are currently underway will address a portion of this identified space need. The Chemistry and Computer Sciences Building will add approximately 88,000 NASF to the University’s space inventory, while the College of Health Sciences and School of Nursing Building will add approximately 83,000. Additionally, preliminary planning has begun for a Multi-Disciplinary Research Facility. The specific use and type of space to be incorporated in this facility planning process will be aligned with needs identified in the development of the University’s research priority areas presented in Section II.
Table VI-1 presents the University’s current facilities development plans to address anticipated space requirements, as they appear in the Texas Higher Education Coordinating Board MP1 (Master Plan) report. It should be noted that anticipated sources of funds for these projects include Tuition Revenue Bonds, Permanent University Funds (PUF), Federal or State grants, foundations, corporations and private philanthropy. Although this MP1 report is limited to a short-term 5-year outlook, it is clear that the timetable for completion of all the programmatic and facility goals included in it will require considerably more time.

Table VI-1: University’s Current Facility Plans

per the Texas Higher Education Coordinating Board MP1 (Master Plan) Report

<table>
<thead>
<tr>
<th>Projects Currently Under Construction:</th>
<th>GSF (ft²)</th>
<th>NASF (ft²)</th>
<th>Project cost</th>
<th>Year</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Science/Engineering Core - Chemistry Computer Science Building</td>
<td>145,827</td>
<td>87,496</td>
<td>$70,200,000</td>
<td>2011</td>
<td>New - E&amp;G</td>
</tr>
<tr>
<td>College of Health Sciences/School of Nursing</td>
<td>137,900</td>
<td>82,740</td>
<td>$60,000,000</td>
<td>2011</td>
<td>New - E&amp;G</td>
</tr>
<tr>
<td>Clean Room Addition</td>
<td>6.876</td>
<td>3,643</td>
<td>$4,500,000</td>
<td>2012</td>
<td>New - E&amp;G</td>
</tr>
<tr>
<td>Science &amp; Engineering Core Facilities Upgrade - Additions</td>
<td>15,000</td>
<td>9,500</td>
<td>$13,000,000</td>
<td>2012</td>
<td>New - E&amp;G</td>
</tr>
<tr>
<td>Science &amp; Engineering Core Facilities Upgrade - R&amp;R</td>
<td>68,000</td>
<td>48,000</td>
<td>$15,000,000</td>
<td>2012</td>
<td>R&amp;R - E&amp;G</td>
</tr>
<tr>
<td><strong>TOTALS:</strong></td>
<td><strong>373,603</strong></td>
<td><strong>231,379</strong></td>
<td><strong>$162,700,000</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Table VI-1: University’s Current Facility Plans (cont.)

<table>
<thead>
<tr>
<th>Future Plans - Currently in THECB MP1 Report:</th>
<th>GSF (ft²)</th>
<th>NASF (ft²)</th>
<th>Project cost</th>
<th>Year</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information Technology Building</td>
<td>30,000</td>
<td>20,000</td>
<td>$10,750,000</td>
<td>2011</td>
<td>New - E&amp;G</td>
</tr>
<tr>
<td>Memorial Gymnasium Renovation</td>
<td>73,250</td>
<td>34,000</td>
<td>$6,750,000</td>
<td>2011</td>
<td>R&amp;R - E&amp;G</td>
</tr>
<tr>
<td>Bio-Engineering Laboratories</td>
<td>14,050</td>
<td>8,430</td>
<td>$10,000,000</td>
<td>2012</td>
<td>New - E&amp;G</td>
</tr>
<tr>
<td>Bioscience GLP Research Building</td>
<td>15,425</td>
<td>9,255</td>
<td>$10,000,000</td>
<td>2012</td>
<td>New - E&amp;G</td>
</tr>
<tr>
<td>Biotechnology Greenhouse</td>
<td>13,100</td>
<td>7,860</td>
<td>$7,000,000</td>
<td>2012</td>
<td>New - E&amp;G</td>
</tr>
<tr>
<td>Computer Science Bldg Renovation</td>
<td>35,898</td>
<td>23,426</td>
<td>$8,200,000</td>
<td>2012</td>
<td>R&amp;R - E&amp;G</td>
</tr>
<tr>
<td>Education Building Renovations</td>
<td>129,262</td>
<td>70,714</td>
<td>$21,100,000</td>
<td>2013</td>
<td>R&amp;R - E&amp;G</td>
</tr>
<tr>
<td>Executive Education &amp; Conference Center</td>
<td>35,000</td>
<td>21,000</td>
<td>$10,000,000</td>
<td>2013</td>
<td>New - E&amp;G</td>
</tr>
<tr>
<td>Campus Upgrades Major Repairs &amp; Renovations</td>
<td>N/A</td>
<td>N/A</td>
<td>$40,000,000</td>
<td>2014</td>
<td>R&amp;R - E&amp;G</td>
</tr>
<tr>
<td>College of Business Administration Addition</td>
<td>45,000</td>
<td>27,000</td>
<td>$16,200,000</td>
<td>2014</td>
<td>New - E&amp;G</td>
</tr>
<tr>
<td>Honors and Student Leadership Institute Addition</td>
<td>138,000</td>
<td>82,800</td>
<td>$56,560,000</td>
<td>2014</td>
<td>New - E&amp;G</td>
</tr>
<tr>
<td>Honors and Student Leadership Institute R&amp;R</td>
<td>108,471</td>
<td>63,632</td>
<td>$18,440,000</td>
<td>2014</td>
<td>R&amp;R - E&amp;G</td>
</tr>
<tr>
<td>Multi Disciplinary Research Building</td>
<td>151,500</td>
<td>90,900</td>
<td>$64,000,000</td>
<td>2014</td>
<td>New - E&amp;G</td>
</tr>
<tr>
<td>Performance Arts Center Renovations</td>
<td>215,060</td>
<td>115,588</td>
<td>$80,000,000</td>
<td>2014</td>
<td>R&amp;R - E&amp;G</td>
</tr>
<tr>
<td><strong>TOTALS:</strong></td>
<td><strong>1,004,016</strong></td>
<td><strong>574,605</strong></td>
<td><strong>$359,000,000</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The University has recently engaged consultants to assist in updating our comprehensive campus master plan that will serve as the blueprint for development of the facility infrastructure that is so critical to attainment of UTEP’s strategic goals. This master plan will include not only projections for the nature and placement of future buildings, but also an assessment of the required upgrades to the campus utility infrastructure to support planned campus expansion. Preliminary sites, either within or adjacent to the campus, have been identified for the future facilities listed in Table VI-1.

Among the financial resources required to support this projected facilities expansion at UTEP will be continued investments of tuition revenue bonds from the State and Permanent University Fund allocations from the University of Texas System. In addition, the University has recently embarked on a major capital campaign in conjunction with the celebration of its 100th anniversary in 2014. This campaign plan includes gift solicitations targeted toward facilities expansion. The University has, in the past, been successful in securing federal funding for facilities construction/renovation and it will continue to aggressively pursue such opportunities.

Library Resources

The UTEP Library houses over one million books, 200,000 government documents, and one million microforms.

Each academic department has a faculty liaison with the Library, with whom subject specialists are in continual communication to update collections in a particular discipline for student and faculty use. These subject specialists have been instrumental in acquiring needed library resources for current, pending, and planned doctoral degrees.

UTEP’s book collections include material on Mexican-American history and culture; a military history collection; the Southwest and Border Studies Collection; the Western Fiction Collection and a Rare Books Collection. There are also 565 manuscript collections in the UTEP Library, many of which focus on border history. A manuscript database exists to help faculty and graduate students access these primary research materials.
The Grant Collection is one of over 200 similar collections affiliated with the Foundation Center in New York. This collection, important to faculty and graduate students, includes directories providing information about public, private, and corporate funding, reference books on grantsmanship, and a selection of U. S. foundation annual reports. In addition, the Library subscribes to the Community of Science database that provides currently available opportunities for grants, fellowships, prizes, and other types of funding.

The UTEP library is strategically positioned to support the University’s robust research and graduate program growth. The advent of electronic materials access has made it possible for academic libraries, wherever they are located, to provide unprecedented support to faculty, staff, and students. This digital revolution in information has in many ways “leveled the playing field” in providing both up-to-date and immediate access to information through full electronic access to digital resources and data bases. Electronic materials, often purchased as a “group buy” with other UT System schools, provide UTEP faculty and students with resources comparable to those available at peer institutions. In the 2008/2009 academic year there were in excess of three million online searches by faculty and students of databases licensed to the UTEP Library. In addition, individual Colleges license specialist databases for research support and doctoral education. For example, the College of Business Administration maintains a subscription to Wharton Research Data Services, the leading web-based business intelligence tool that is the market standard for all the major research business schools world-wide. It serves doctoral students conducting research in the International Business and Computational Science PhD programs.
The Library’s current technologies, excellent facilities, and professional staff effectively support existing PhD programs. Library administrators regularly add print and electronic materials based on interaction with faculty in each program. As part of the planning and approval process for proposed PhD programs, an assessment of library resources is conducted. Institutional administrators do not proceed with a program request unless Library administrators can verify that adequate materials are available or can be added at a reasonable cost with available funds. Part of the outside evaluation of any new program proposal is a verification of this process. The Library is continually adding print and electronic materials to effectively support the current graduate courses and programs and prepare for the introduction of new doctoral programs as they are developed. In the past three years, for example, the Library has increased its licensed/available databases by more than 30%.

UTEP currently licenses more than 430 electronic databases providing access to periodical literature citations as well as full text access to documents such as periodical literature and government reports as a part of the growing electronic collection. The major relevant electronic indexing, abstracting, and full text resources to facilitate research are part of these licensed databases. For example, the multidisciplinary online product, Academic Search Complete (EBSCO), provides greatly expanded full text coverage for most academic disciplines.

The UTEP Library has also been aggressively adding E-Books to its collection. Through subscriptions and purchases, the Library now provides access to more than 55,000 E-Books. All of these electronic resources are searchable through the online library catalog. Remote access to electronic resources is available through a secure UTEP logon protocol. To maintain and increase the number of hard copy books in the collection, the library has an approval-purchasing plan that provides new publications for review and adoption on a weekly basis.

The total Library acquisition budget has grown by more than 40% since 2004-05, and the University is committed to maintaining that level of development.

To further strengthen the availability of information resources to faculty, students, and staff, UTEP has forged strong collaborative and cooperative arrangements with area institutions and also utilizes alternative means, such as exchange agreements and electronic resources to support research. Interlibrary Loan (ILL) service is available to all students and faculty for resources that are not available in the Library. The Library's
membership in OCLC provides access to over 20,000 libraries around the world, providing convenient access to resources needed by faculty and students.

The Library membership in AMIGOS Bibliographic Council joins UTEP with 140-plus member libraries in the Southwest that share resources. In a reciprocal agreement, the New Mexico State Library extends borrowing privileges to UTEP faculty and students, and the NMSU campus is a relatively short 40-minute drive from UTEP. UTEP faculty and students also have borrowing privileges in all 55 public universities in Texas through a cooperative network, TexShare. The UTEP Library also has reciprocal arrangements for inter-library loan with eleven libraries in Mexico. These libraries include major research libraries in central Mexico, including the Colegio de México, the Universidad Iberoamericana, the Universidad de las Américas in Puebla, and the Instituto José Mora, among others. On the border, UTEP also has a cooperative relationship with the Universidad Autónoma de Ciudad Juárez.

## Plans to Enhance Library Resources

Keeping the collection current, both print and electronic, is a joint responsibility of the Library and the academic departments. Subject Specialist Librarians work directly with the faculty and departments to continually enhance the collection by reviewing all resources available and new publications. Current renewable resources are reviewed annually before renewal to ensure that they are being used. The Library conducts presentations and orientations for new faculty to acquaint them with the resources available, and how to request additional databases or retrospective purchases. The process of supporting continuing and new doctoral programs ensures that as programs grow or shift focus, resources are also shifted to accommodate these changes. When new programs are proposed and developed, Subject Specialist Librarians work closely...
with relevant faculty to identify information needs and shift available resources to meet those needs.

The current Library resources support all current doctoral programs offered on the UTEP campus. Current and retrospective materials have been added to the collection as needed for new doctoral programs. The UTEP Library will continue its current, effective process of staff subject specialists working with academic department liaisons to build resources for the institution’s proposed new doctoral programs. The total Library acquisition budget has grown by more than 40% since 2004-05, and the University is committed to maintaining that level of development.

Graduate Student Support

UTEP doctoral programs have been successful in recruiting and graduating highly competitive doctoral students, as evidenced by their success in their graduate work, by the demand for them in other research institutions, and by the high-quality professional placements they secure within and outside of academe.

There is, however, a growing awareness at UTEP and at many other Texas universities that current stipend levels are not competitive with those offered by national research universities in other states in the Southwest, let alone nationally. Inadequate stipends not only reduce competitiveness in recruitment; they also sometimes attenuate degree completion time for doctoral students who must find other sources of financial support, resulting in negative impacts on both the student and the economy as their entry into the highly skilled workforce is delayed.

In order for UTEP to achieve its goal of graduating approximately 200 doctoral students annually, the following strategies will have to be developed and implemented over the course of the next decade:

- for our existing doctoral programs identify which assistantship stipends and fellowship awards are not currently competitive for successfully recruiting and retaining highly qualified students, and develop specific plans to increase those support levels as quickly as possible;

- increase the numbers of funded doctoral students, so that programs achieve critical masses of doctoral students in key specialty areas of faculty
strength and that students gain the benefits of working with colleagues in academic collaborations;

- develop funds to support assistantships for the new doctoral programs so that they can launch at critical mass and so that doctoral students are well distributed among research-active core faculty;

- develop specific plans for each college to generate resources for doctoral student fellowships through private and corporate fundraising and for research assistantships through grants in order to augment the funding available through the State budget; it is projected that over time State funds will become focused on support for the first two years of a student’s funding package and after that other funding sources will be used; and

- develop within each college a culture and the associated support systems to accelerate students towards graduation; the Provost, Dean of the Graduate School, and the Deans of the Colleges will monitor progress towards graduation for all doctoral students on an annual basis.

As part of the current planning for research, the Dean of each College conducted a market analysis of competitive 9-month assistantship stipends for research universities in the Southwest (Texas, Arizona, and New Mexico). This information enabled Colleges to set targets within the context of this region’s cost-of-living. Each College then developed a plan to increase its stipends to competitive levels as quickly as possible, depending upon the extent of the increases that need to be
phased in and the numbers of students to whom commitments have already been made. Each College also projected the numbers of funded PhD students in its programs over the next ten years as well as the likely contributions they could generate from growth of existing scholarships, from the College’s Centennial Campaign plan, and from the potential growth in support for doctoral students funded by research grants and contracts.

The results of those studies and model projections produced the following outcomes for strategic planning purposes. First, the number of full-time funded doctoral students is projected to grow from 257 in 2009-10 to 552 in 2014-15 and 676 in 2019-20 (see Figure VI-1). Given current programs, the Colleges of Engineering, Science and Liberal Arts will have the largest numbers of funded doctoral students, with the greatest growth in Engineering and Science. The College of Business Administration doctoral enrollment is also expected to grow sharply as awareness of the doctorate spreads and following high national ratings of the MBA programs.

Figure VI-1: Projected Growth of Full-Time Funded Doctoral Students

![Graph showing projected growth of full-time funded doctoral students by year and by college.](image-url)
Doctoral student support is projected to grow over the next decade, from a total of $4.4M in 2009-10 to $15.9M in 2019-20 (see Figure VI-2). The largest budgets will be in Science and Engineering, at approximately $5M per year, followed by Liberal Arts, with more than $3M, and Business with approximately $1.5M.

Figure VI-2: Projected Growth of Total Doctoral Student Support

Doctoral-student stipends are presently funded 52% from State budget sources, 33% from grants and 15% from fellowships (see Figure VI-3). As UTEP moves toward becoming a national research university, the proportion of our doctoral student support budget that will be generated through grants is expected to increase steadily, reaching approximately 50% by 2020. Similarly, the University’s Centennial Campaign offers a good opportunity to raise private support for graduate student scholarships and fellowships, and Campaign fundraising to date has confirmed the interest of donors in supporting doctoral students. It is anticipated that sufficient funding will be generated to increase annual fellowship support for doctoral students from the present $674,000 level to more than $2,250,000 by 2020. As a result, the portion of the doctoral student support budget that is supported by State funding will decline from 52% to 37% by 2020.
Another element in improving the competitive position of the University in recruiting excellent doctoral students is the ability to offer tuition waivers, as national research universities in many states do, or to provide full or partial funding for tuition of full-time funded PhD students. This is an issue for all of the public research universities in Texas and UTEP will continue to work with the rest of the higher education sector to find ways to address it.

Graduate student support is a critical need in any doctoral-granting institution. In addition to fellowships, teaching assistantships, and research assistantships offered through its departments and colleges, UTEP’s Graduate School has initiated several financial support programs for doctoral students. Among these efforts are the following: short-term fellowships to support students completing their dissertations; emergency funds and optional payment plans; and supplementary funding for travel to professional conferences to present their research. The Dean of the Graduate School is working with UTEP’s Office of Development to raise several million dollars for student fellowships as part of the University’s Centennial Campaign and the Associate Vice President for Research works with
Faculty and the Dean of the Graduate School to identify research assistantship opportunities available to graduate students from a variety of federal agencies.

Regional & State Partnerships

UTEP’s development to this point as an emerging national research university and its future trajectory to national prominence are built upon a number of essential regional and State partnerships.

They offer unique competitive advantages and strategic benefits upon which we have capitalized to reach our current level of research and doctoral program performance, and which will continue to support work of national distinction in the future. Below are specific examples of strategic regional and State partnerships that are not only contributing to UTEP’s level of research, but also providing access to expertise and facilities not available at UTEP.

Paul Foster School of Medicine (PFSOM)

Faculty, staff, and students of UTEP and the Paul Foster School of Medicine of Texas Tech University Health Science Center in El Paso actively collaborate in areas of common teaching, research, and professional development interests. Both institutions have agreed that they have a mutuality of interests in sharing resources, facilities, staff, and information. As a result, a program of exchange and research collaborations, with the appropriate guidelines and clauses to protect intellectual property, has been established that allows for, among other things, joint faculty and staff appointments, access to communication between faculty and to facilities from both institutions. As a result, more than a dozen joint proposals to funding agencies have been submitted during the past year in areas of mutual interest related to border health, cancer, tissue engineering, neurological rehabilitation, HIV biomedical research, biomedical imaging, and other biomedical science and engineering topics. In addition, UTEP language and linguistics faculty is assisting PFSOM by providing medical students educational programs in such non-medical areas as Spanish language.

UT Health Science Center – Houston, School of Public Health

UTEP is the host institution for the El Paso regional campus of the School of Public Health (UT-SPH) of the UT Health Science Center – Houston. The UT-SPH is currently occupying space in the Stanton Building, as well as laboratory spaces in
the Physical Science complex, the Biology building, and Burges Hall on the UTEP campus. The spaces occupied are in close proximity to UTEP faculty in the College of Health Sciences, School of Nursing, and the Biological Sciences Department. Researchers from UTEP and UT-SPH are currently collaborating in NIH-funded grants addressing public health research on Hispanic health disparities issues and performing participatory-based research to promote lifestyle and environment changes to reduce cardiovascular diseases in the U.S.-Mexico Border region.

William Beaumont Army Medical Center at Ft. Bliss
A strong collaborative relationship has been established with the William Beaumont Army Medical Center (WBAMC) in El Paso, with a strong mutual commitment to collaborate on research and share facilities. For example, UTEP researchers whose work requires large animal laboratory testing, have access to the AALAC-accredited facilities at WBAMC. Conversely, UTEP’s Biostatistical Consulting Laboratory supports researchers at WBAMC. Significant research collaborations are underway to address emerging regional issues associated with the significant troop expansion at Ft. Bliss, including Post-Traumatic Stress Disorders, Traumatic Brain Injuries, and mental health and quality of life issues of returning soldiers and their families. Formal agreements between UTEP and WBMC are in place, establishing the framework for sharing research resources as well as allowing health-professions students to do clinical training and research at WBAMC facilities.

New Mexico State University
The relative proximity of UTEP and New Mexico State University (NMSU) in Las Cruces, New Mexico (40 miles north on Interstate 10) has created favorable conditions for numerous collaborations between faculty members in several disciplines at the two institutions. For example, faculty in UTEP’s departments of Computer Science and Mathematical Sciences participate, along with colleagues at NMSU, in research activities funded by the U.S. Army Research Laboratory through the Army’s High Performance Computing Research Center (AHPCRC), to advance algorithm capabilities and new computing models to make efficient use of innovations in computer architectures of emerging high-performance computers. Moreover, in the area of desert ecology, joint collaborations exist in support of NMSU’s Jornada Basin Long Term Ecological Research (LTER) Program, where researchers in UTEP’s CyberShARE Center have developed tools to share and coordinate access to instructional and research materials used by faculty within UTEP, NMSU, as well as New Mexico Tech in Socorro, New Mexico.
Many similar collaborations are underway in the Colleges of Engineering, Education, Science, Liberal Arts and in the School of Nursing.

**New Mexico Institute of Mining and Technology**

New Mexico Tech (NMT) and UTEP have entered into an agreement to combine their knowledge of complex systems analysis, border operations, and international policy to collaborate in areas of homeland security and defense. These sustained efforts are focused on terrorism, organized crime, illegal drugs and other transnational illicit threats. NMT collaborations with UTEP’s National Center for Border Security and Immigration (NCBSI) are considering the U.S.-Mexico border as an interconnected system of systems comprising infrastructure, social organizations, information networks, and policy constraints. The application of complex systems analysis is expected to identify critical aspects of border issues.

**Ft. Bliss**

UTEP and Ft. Bliss are working together to improve the level of communication and cooperation between the two parties to address areas of importance to Ft. Bliss and to strengthen and expand areas of academic and scientific interest to UTEP. With this agreement, both institutions will promote regular institutional exchanges and joint project reviews of mutual interest, identify joint research projects of strategic and tactical importance in the areas of environmental
sustainability, social and behavioral sciences, renewable energy and other targets as identified, and exchange information pertaining to unmet needs. Ft. Bliss has been designated as the U.S. Army’s Center for Renewable Energy. Given the Department of Defense’s goal to make military installation energy independent of the national grid, Ft. Bliss is becoming the test-bed for renewable energy systems. This will create many opportunities for collaborative work at UTEP.

White Sands Missile Range (WSMR)
UTEP has established collaborative agreements with the U.S. Army WSMR to perform research, development, test and evaluation in a wide range of areas in either direct or indirect support of the U.S. Department of Defense as well as assist in the workforce needs of WSMR. Representatives of the two institutions regularly meet to conduct technical discussions associated with topics such as space surveillance and vehicles, flight test of new innovative air vehicles, sensor fusion, robotics and navigation, electromagnetic interference and radiation effects, climate and environmental testing, instrumentation and system development, among others. In addition, UTEP is part of the Workforce Development Council for WSMR, a partnership between NewTec, NMSU, UTEP, and other regional academic institutions, to provide students with local professional job opportunities while helping NewTec, with recruitment of local collegiate talent for employment under NewTec’s contract with WSMR. Under this agreement, UTEP students are provided internships, research opportunities, and scholarships as part of their professional development in consideration for potential employment at WSMR.

National Laboratories
UTEP faculty and staff have multiple research and educational interactions and collaborations with scientists from U.S. Department of Energy Laboratories, including Sandia National Laboratories (SNL), Los Alamos National Laboratory, National Renewable Energy Laboratory, Oak Ridge National Laboratory, Lawrence Livermore National Laboratory, Brookhaven National Laboratory, Argonne National Laboratory, and the SLAC National Accelerator Laboratory. SNL not only actively recruits UTEP students, but also supports UTEP’s research programs in the areas of nanotechnology, manufacturing, supply chain logistics, water, and desalination. UTEP geophysicists support Los Alamos National Laboratory in monitoring seismic events as part of the enforcement of nuclear treaties. Faculty in the materials science and engineering areas collaborate with Brookhaven National Laboratory and SNL in topics such as materials surface characterization and electron microscopy. In addition, UTEP students, staff and faculty also have privileges to access and use the Synchrotron facilities at the SLAC National Accelerator Laboratory that allow them to perform multiple forms of X-
ray diffraction techniques for the characterization of solid state and biological materials. Faculty members have routinely capitalized on summer fellowships opportunities to do research at the laboratories, developing relationships that have generated long-term collaborations and steady funding.

**El Paso Water Utilities (EPWU)**  
The University of Texas at El Paso received funding from the Texas Emerging Technology Fund to establish a desalination and water management research program in support of El Paso Water Utilities to develop commercial ventures and help solve water scarcity issues in arid regions. UTEP’s Center for Inland Desalination Systems (CIDS) will address fundamental and applied research questions associated with El Paso’s Senator Kay B. Hutchison Inland Desalination Plant. Researchers in the University and the center are partnering with the EPWU to develop and implement technologies to create alternative water sources and to manage brine concentrate residues of the desalination process. The University also partners with EPWU and other regional institutions and organizations, forming the Consortium for Hi-Technology Investigations in Water and Waste Water (CHIWAWA) which facilitates and promotes the transfer of technology, training and research among the consortium members.

**Regional Economic Development Corporation (REDCo)**  
The El Paso REDCo is a private non-profit corporation with a charter to recruit businesses and industry to relocate operations to the Greater El Paso region. As such, REDCo provides its clients with current information on community infrastructure, business climate, labor force, workforce training options, taxation, regulation, and many other issues relevant to placing operations in the region. UTEP supports REDCo’s efforts by providing information to their clients on UTEP’s capabilities in research and development and STEM-related educational programs that contribute to the technical workforce of interest to the industry being recruited. This relationship has resulted in some research opportunities in partnership with industry related to Defense, Energy, Biomedicine, and Homeland Security. This relationship has enabled UTEP faculty and staff to collaborate with more than 30 of REDCo’s clients and resulted in numerous joint funding opportunities for research and development.

**Industry Partnerships**  
UTEP has a well-established administrative infrastructure to manage subcontracts from major industry prime contractors to support major projects for basic and applied research, as well as for testing and evaluation. The projects are funded by
federal agencies, such as NASA, U.S. Air Force, U.S. Army, Department of Homeland Security, and others. The projects are typically managed by UTEP’s interdisciplinary research centers: the Future Aerospace Science and Technology Center –FAST, the Research Institute for Manufacturing and Engineering Systems – RIMES, the W. M. Keck Center for 3-D Innovation, and the Center for Defense Systems Research – CDSR. UTEP’s industry partners include Lockheed Martin Space Operations, Lockheed Martin Space Systems, Lockheed Martin Advanced Development Programs, Lockheed Martin Aeronautics, Boeing Defense Space & Security, Clarkson Aerospace Inc., Jacobs Technology, Jacobs Engineering, and the Raytheon Company. For these industry-UTEP projects, the activities are directed by faculty and research staff members who supervise undergraduate and graduate students, so that students receive work experiences in an industry team environment that cannot be gained from a classroom. Through their experiences and the mentoring received, they become highly qualified upon graduation and are prepared to compete against students from any research university in the world. The faculty members develop industry relationships that expose them to research issues associated with real-world problems and provide them with other opportunities to grow professionally.

Other State Partnerships
As mentioned in Sections II and V of this document, UTEP has a network of collaborations throughout the state in support of faculty and staff addressing strategic areas of research. Along with these partnerships, also come the sharing of resources and laboratory facilities. For example, in the area of health and biomedical sciences, strong collaborations exist with the organizations listed below, which allow access to additional clinical and instrumentation resources:

- MD Anderson (B-Cell Lymphoma and T-Cell research)
- University of Texas Medical Branch (Chagas Disease, Tick-borne Encephalitis virus Vaccine, Rift Valley Fever virus vaccine, and Ecology of Dengue viruses)
- University of Texas Health Science Center – Houston (Organ transplants)
- University of Texas at Austin (Cancer research, Pharmacy)
- Baylor College of Medicine (Insect Neuroscience research)
The K-16 Closed Loop & the El Paso Collaborative for Academic Excellence

The Independent School Districts (ISD’s) of El Paso and West Texas and the El Paso Community College (EPCC) are critically important research and educational partners for UTEP.

For the last twenty years the El Paso Collaborative has brought together these PreK-16 partners with the common understanding that they form a closed loop – a community which retains an unusually large number of students from school to college to university which, in turn, prepares the teachers to staff the schools. This reciprocity of challenges and benefits has generated extensive research at UTEP and multi-million dollars in federal and foundation funding, and served as a platform for the cutting-edge research conducted by UTEP’s Center for Research on Educational Reform. The continued support of the schools and of EPCC will be required to raise the aspirations and academic attainment levels of young people in this region, of working adults who are seeking professional advancement, and of the military personnel and their families who will be coming to this region. As indicated in Section I, UTEP’s strategy to become the first national research university serving a 21st century demographic is built upon growing the University and that means expanding the pools of well-prepared entrants and re-entrants. It is because of the scale and effectiveness of these partnerships with the ISD’s and EPCC that UTEP has been able to take such a strong lead in Texas in Closing the Gaps for Hispanic student participation and success while at the same time growing nationally competitive research and nationally distinctive doctoral, professional and graduate programs. This innovative PreK-16 work being done in El Paso will not only help achieve UTEP’s national research university goals, but also serve as a model for universities throughout the United States that will be faced with rapidly changing student demographics in the years ahead.

UTEP’s Centennial Fundraising Campaign

UTEP’s future as the nation’s first major research university with a 21st century student demographic will depend on having sufficient financial resources in place when and where they are most needed.

Declining state appropriations and mandated budget reductions, combined with self-imposed constraints on tuition and fee increases in response to UTEP students’ price sensitivity, create a context in which private philanthropic support becomes
increasingly critical. To this end, the University has launched the largest comprehensive fundraising initiative in our history, *At the Forefront: The Centennial Campaign for UTEP*, which will culminate in 2014, UTEP’s 100th birthday.

The campaign, which commenced in 2007 and is now in its quiet/leadership phase, will celebrate a public launch in September 2010. Funds raised through the Centennial Campaign will have a sweeping impact on UTEP’s research and academic programming, particularly strengthening our doctoral studies, and serving to accelerate the University’s progress toward the national research university goal.

The campaign seeks to raise $200 million, which will build our endowment, provide financial support for graduate and undergraduate students, enable us to recruit and retain highly competitive research faculty, and enhance excellence in academic and research programs across the University campus.

The campaign has targeted $26 million for endowed faculty professorships and chairs, $69 million for undergraduate scholarships and graduate fellowships, $22 million for programmatic support, $36 million for equipment and research, and $46.5 million for capital construction and renovation. Each of these campaign priorities is tied to UTEP’s quest for excellence and distinction at all levels.
The Centennial Campaign will make UTEP more competitive in the recruitment and retention of outstanding faculty from across the country. To become a national research university and to sustain that level of performance, UTEP must continue enhancing its research competitiveness by recruiting and retaining world-class faculty. UTEP has already benefited from the arrival on campus of highly accomplished new faculty members in many disciplines, who are quickly making a name for UTEP and themselves. These talented educators and researchers are developing exciting, innovative research and teaching programs, and inspiring and training the next generation of researchers, scholar-teachers, and entrepreneurs. Our faculty must continue to expand knowledge within their disciplines and across them, in a synergy that gives significant returns on investments – new and improved technologies, practical solutions to urgent problems, better understanding and clearer insights. Private support for the establishment of faculty endowments will provide UTEP with the prestige and the resources necessary to compete for faculty who can deliver on those promises.

Talented UTEP educators and researchers are developing exciting, innovative research and teaching programs, and inspiring and training the next generation of researchers, scholar-teachers and entrepreneurs.

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UTEP’s highly talented and motivated students, at both graduate and undergraduate levels, are also critical to UTEP’s progress toward becoming a national research university. Funding from the Centennial Campaign will provide additional scholarships, stipends and fellowships to attract more outstanding undergraduate and graduate students from the Paso del Norte region, the southwestern U.S. and beyond. Increasing the University’s endowment will enable UTEP to attract and serve even more effectively greater numbers of this region’s most talented high school graduates. Today, more than 60 percent of El Paso County’s Top Ten Percent high school graduates who enroll in Texas public universities already choose UTEP, and this number will steadily rise as UTEP is able to compete for their talent with more robust merit-based scholarship offers.

Funding to provide additional graduate student support has become especially critical as UTEP expands its graduate program offerings, particularly at the doctoral level. UTEP currently offers 16 doctoral programs, with an enrollment of nearly 500 doctoral students, and this strategic plan anticipates the establishment of 24 additional programs and an enrollment of 1,609 doctoral students by 2020.
Recruiting highly accomplished and high-potential graduate students to UTEP’s growing number of doctoral programs will require increasing the number of graduate fellowships and stipends and their dollar value to be competitive with those at other doctoral institutions. The Centennial Campaign has set graduate student fellowships and stipends as one of its highest priority funding targets.

UTEP is committed to provide these students and our faculty with laboratories and research facilities that are consistent with industry needs and necessary for them to excel. Nearly $250 million in construction and renovation projects are now underway on campus to provide the best possible platform for more robust research and educational programs. Centennial Campaign funds will be used to launch innovative new capital investments and provide state-of-the-art equipment for many of the new facilities currently under construction.

The support of UTEP’s stakeholders is evident in the significant progress that we have already made toward achieving our ambitious $200 million campaign goal. Through an intensified focus on the acquisition of major philanthropic gifts, UTEP has already raised more than $96 million toward the Centennial Campaign goal. Of that total,

- $13.3 million is targeted for undergraduate scholarships and graduate fellowships;
- $14.6 million for new technology and facilities enhancements;
- $2.95 million is for attracting, retaining, and rewarding the accomplishments of UTEP’s exceptional faculty;
- $20.2 million is designated for research; and
- $44.9 million for core program support across the campus.

These transformative private gifts and grants have already increased UTEP’s endowment to $146.1 million, and attainment of the Centennial Campaign goal is expected to enable it to grow by another $100 million. This endowment growth will contribute to the achievement of UTEP’s mission and priorities, and substantially impact our capacity to successfully build a national and international reputation in the focus areas set forth in this strategic plan.

The launch of the Centennial Campaign has initiated a period of record fundraising success at UTEP. The past year has been the most
productive for annual private gifts in the University’s history, with $27.7 million in cash, pledges and deferred gifts raised during FY 2008-09, and marked the third consecutive year in which private giving has climbed at UTEP. Additionally, at the start of FY 2009-10, some of UTEP’s most generous supporters stepped forward with leadership gifts totaling $4.15 million in response to the State Legislature’s Texas Research Incentive Program, which began matching qualified gifts received as of September 1, 2009. These contributions qualified for $2.95 million in Texas Research Incentive Program (TRIP) matching funds to be paid over the 2009-2011 biennium. The concurrent and similarly unprecedented growth in facilities, programs, faculty and enrollment at UTEP means that as the community and our stakeholders are increasing their commitment to UTEP, the University has responded by rapidly developing its capacity to leverage those investments.

A successful Centennial Campaign will fortify UTEP’s presence on the regional, national, and world stages and strengthen our capabilities as the preeminent national model for urban public research universities. In addition to many other investments being made in UTEP’s future development, the Centennial Campaign will further enhance UTEP’s growing national and international reputation and provide the necessary support to move the University toward its goal of becoming the first national research university in the United States with a 21st century demographic.
Section VII: National Visibility

The presence of UTEP among the seven institutions identified by the THECB and the Texas State Legislature as emerging national research universities has already had a significant impact on the national visibility and research reputation of UTEP and, indeed, of the entire Tier One process.

There is no other public university in Texas, or for that matter in the United States, with a 75% majority Mexican-American student body that has been designated by its State’s higher education authority as an emerging national research university and targeted for advancement to that status within a decade or so. Outside Puerto Rico, there is only one other Hispanic majority institution within striking distance of national research university standing – and that is Florida International University – but the State of Florida has no agenda comparable to Texas’s Tier One aspiration. So, for the fastest-growing demographic in Texas and in the United States, UTEP’s participation in and success with the Tier One process is already a matter of high national visibility. The fact that UTEP has earned its place among the seven emerging research institutions by its increasingly competitive research performance during the past 20 years is of enormous significance for all institutions in this country which are Hispanic-Serving or which may emerge as Hispanic-Serving over the next decade.

In this final section of the Strategic Plan for Research, we will address three issues:

- how national research universities serve their region and state populations;
- how Tier One in Texas must complement Closing the Gaps; and
- what it will mean for UTEP to become the first national research university serving its 21st century demographic.

Together, these issues will clarify what this Tier One process will mean for the national visibility and research reputation of UTEP and of the State of Texas.
National Research Universities Serve Their Region, State, and Nation

There appears to be confusion in some discussions about the Tier One process regarding the extent to which national research universities serve their region or their state. To some it appears that a research university must be either regional or state-wide, and a national research university must necessarily belong to the latter group. However, this is not a real distinction. The populations from which a national research university draws its students reflect very much its history and its geography.

Universities become research universities by the activity of their faculty and students. A university located in a major metropolitan area must continue to serve that population base as it develops its graduate and research capacity, unless some other institutions move into that metropolitan area and take up that mission. A university located in a smaller city or rural area must of needs draw more widely for its student body. Many land-grant schools were located in small towns and developed their state-wide mission from their earliest days. This may have fed the notion that research universities must abandon their regional populations and become “state-wide.” It is certainly not the case nationally where all the major public research universities located in metropolitan areas maintain a strong commitment to their city and their region, as well as their state and the nation at large.

UTEP started as a specialist institution with a state-wide mission – it was Texas’s mining school, the Texas State College of Mines and Metallurgy. It grew into a regional university and then, when the THECB’s prohibition on its development of doctoral programs was finally lifted in the early 1990s, grew its graduate and research capacity rapidly and competitively. With almost $60 million of sponsored research expenditures in FY 2009 and over $250 million in state, federal, and private investment in its facilities and research infrastructure actively building and
For the fastest-growing demographic in Texas and in the United States, UTEP’s participation in and success with the Tier One process is already a matter of high national visibility.

Recent reports from the THECB show that Hispanic participation in Texas two- and four-year institutions, public and independent, grew by 129,484 over the eight years from 2000-08. But in order to reach the target set by Closing the Gaps, these institutions will have to enroll an additional 310,000 (see Figure VII-1). This dramatic shortfall in

renovating its campus today, UTEP is an emerging research university that is very much on the move.

UTEP is a regional university in that 83% of its total students come from El Paso County. But it is also a state, national, and international university, enrolling students from 6 continents, 74 countries, 45 states, and every region of Texas. UTEP serves as the only public 4-year institution for the El Paso metropolitan area whose population is approaching 1 million people. The only other 4-year institution in the Upper Rio Grande Region is Sul Ross University, which enrolls just over 2,000 students and is beyond a comfortable daily commuting range (even for most Texans). No other metropolitan area of comparable size or larger in the State of Texas is as underserved in terms of the available capacity of 4-year colleges and universities.

Closing the Gaps for Hispanics in Texas

Texas led the nation a decade ago when it made the public commitment to ensure its 21st century economic competitiveness by Closing the Gaps in student participation and success in higher education, and it holds itself publicly accountable through the THECB by reporting regularly on its progress. And that progress has been significant over the last decade, with one striking exception – the shortfalls in opening the pathway to our colleges and universities for the burgeoning populations of Hispanics, and in recruiting, retaining, and graduating Hispanic students, whether they be traditional recent high-school graduates or working adult re-entry students. In El Paso, as in other parts of Texas, active service military, veterans, and their families are a very important part of these populations as well.
the enrollment of Hispanics accounts for 90% of the enrollment increases needed to reach the total participation goal for the State.13

Where are the Hispanic students going to college in Texas now and how will the Tier One process, also viewed as a strategy to ensure the State’s future economic competitiveness, affect Closing the Gaps?

In 2008, about 57% of Hispanics who enrolled in post-secondary education in Texas were in community colleges (public 2-year schools), 34% in public 4-year colleges and universities, and 8% in independent colleges (see Table VII-1). There has been a slight shift in the share of enrollment towards the community colleges since 2000 (from 54% up to 57%). However, when we look at the targets the institutions and THECB have developed for 2015 a more dramatic change will occur. The Closing the Gaps targets for 2015 show a substantial shift in share towards the 2-year sector, where it is projected some 64% of Hispanics will enroll by 2015. The 7-point shift of Hispanics into community colleges between 2008 and 2015 is matched by a 3-point reduction in Hispanic share in public 4-year institutions and a 3-point reduction in the share enrolled in the independent sector.

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13 Source: THECB, Closing the Gaps by 2015: 2009 Progress Report
If we only consider the public 4-year institutions, the advancement of seven of them as emerging research universities over the course of the next decade, through the Tier One legislation and ensuing processes, surely should not widen the gap in Hispanic participation. But there is a very real danger, unless some action is taken very quickly, that that is precisely what will happen. According to the targets currently in place, the share of the State’s Hispanic enrollment attending a public 4-year institution in Texas will drop by 3 points between 2008 and 2025, and so will the share attending the 7 emerging research institutions engaged in the Tier One process. Therefore, as the State’s Hispanic population grows, Hispanic participation in post-secondary education is failing to Close the Gaps, and proportionally more of those who do enroll in college are doing so in a community college, rather than a public or independent 4-year school. And of those who do enroll in a public 4-year institution, a smaller share of Hispanic students is enrolling in the research institutions of the public 4-year sector.

**Table VII-1: Closing the Gaps for Hispanics—Enrollment and Targets by Type of Institution**

<table>
<thead>
<tr>
<th>Hispanic Enrollment</th>
<th>237,394</th>
<th>366,878</th>
<th>676,100</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Public Two-Year</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td>129,308</td>
<td>210,476</td>
<td>429,947</td>
</tr>
<tr>
<td>Share of Total</td>
<td>54%</td>
<td>57%</td>
<td>64%</td>
</tr>
<tr>
<td><strong>Public Four-Year</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td>82,815</td>
<td>126,416</td>
<td>212,813</td>
</tr>
<tr>
<td>Share of Total</td>
<td>35%</td>
<td>34%</td>
<td>31%</td>
</tr>
<tr>
<td>Emerging Research</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td>31,859</td>
<td>47,706</td>
<td>70,870</td>
</tr>
<tr>
<td>Share of Total</td>
<td>13%</td>
<td>13%</td>
<td>10%</td>
</tr>
<tr>
<td>Share of Public 4-Year</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td>31,859</td>
<td>47,706</td>
<td>70,870</td>
</tr>
<tr>
<td>Share of Total</td>
<td>13%</td>
<td>13%</td>
<td>10%</td>
</tr>
<tr>
<td><strong>Independent</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td>25,271</td>
<td>29,986</td>
<td>33,340</td>
</tr>
<tr>
<td>Share of Total</td>
<td>11%</td>
<td>8%</td>
<td>5%</td>
</tr>
</tbody>
</table>
Each of the emerging seven institutions should at least maintain their current share of Hispanic college students in Texas who attend public 4-year institutions. That will be no small challenge for these institutions.

Currently there are only two Hispanic-Serving Institutions among the seven emerging research universities identified in Texas. How much is each of the seven closing its regional participation gap? What trend does each institution show?

In the following diagram, the blue bar shows the percentage of Hispanic students at each institution and orange bar shows the percentage of Hispanics in the metropolitan area in which that institution is located and from which it draws the majority of its students (see Figure VII-2). The 25% line indicates the threshold for designation as an Hispanic-Serving Institution. A shrinking orange bar reflects an institution that is closing the Hispanic participation gap in the region it serves. As the figure makes clear, only UTEP is closing the participation gap. Indeed, the gap at several institutions is quite large and has only grown over time.

The challenge for the State is to grow Hispanic participation in the emerging research institutions. UTEP presently has 11.0% of the total headcount enrollment of the seven, but 32.2% of the combined Hispanic headcount enrollment of the group. What that means is that Texas cannot advance Hispanic participation in the emerging research universities without UTEP at least maintaining its contribution. And we do that by serving our regional population and by attracting Hispanic students from elsewhere in Texas and elsewhere in the United States. Texas cannot begin to close this gap without UTEP continuing to be, among other things, a vital and successful regional university. And UTEP cannot serve its region equitably, cannot bring to its population equitable access to the benefits of a national research university to the same extent available to students who live in other regions of the State, without also completing its course to become a national research university.
Figure VII-2: Closing the Gaps in Hispanic Student Participation by Emerging Tier One Research Universities in Texas, 2002-08
The First National Research University Serving its 21st Century Demographic

UTEP’s commitment to becoming the first national research university serving a 21st century demographic started with the fundamental principle that talent is everywhere and that all talent should have an equitable opportunity to develop, to be taken as far as it can go. The gene pool of the million people in El Paso is as rich in brilliance, creativity, diligence, and tenacity as the gene pool of any other million Texans. Its people are not, however, blessed with equal financial resources or job opportunities. It is the responsibility of public education to address this challenge.

In order for Texas to be competitive with the major states of our country and the world, it is simply not acceptable to pre-empt the fastest-growing and soon to be leading demographic group from participation in the full range of higher educational opportunities. The fact that there is yet no fully developed national research university with a student body that reflects the future demography of Texas and of the United States makes it clear that simply replicating the way Tier One schools developed in the middle and late 20th century will only ensure that Hispanics do not have equitable access to a research university experience. That’s a price the Texas economy, let alone its conscience, can no longer bear.

When the El Paso Collaborative for Academic Excellence was launched twenty years ago, it recognized the essential continuity and coherence of the K-16, and later PreK-16, continuum. At the time UTEP was limited to a single doctoral program, in geological sciences. Aspiration and ambition for west Texas did not extend into doctoral education and research. Since then, UTEP has grown – into a significant doctoral university with 16 doctoral programs and 6 more currently under review. It has also grown into a substantial emerging research university, with $60 million of sponsored research activity last year. In 2010, the Tier One process raises the prospect of UTEP completing its course to extend educational opportunity as far it goes, to the frontier of new knowledge creation found in a national research university.
The question then might be shaped as follows: if the LULAC/MALDEF lawsuit had not created a favorable climate for UTEP’s doctoral program development and UTEP had remained restricted to its original and single doctoral program in geological sciences, would Texas be better off today?14 It is our responsibility to ensure that the shortsightedness that prevailed until 1990 not be replicated in 2010 – and that’s a real danger if the same assumptions that have historically excluded Hispanics and squandered the talent assets they represent for the rest of the State are allowed to persist.

UTEP has shown those assumptions to be false. Students from low-income families can succeed at the same rate as those from more affluent backgrounds – at UTEP there is no difference between the percentage of new students receiving Pell grants and the percentage of the graduating class receiving Pell grants (see Figure VII-3).

**Figure VII-3: Pell Grant Recipients in Entering and Graduating Classes at UTEP**

![Graph showing percentage of Pell Grant Recipients: New Students and Undergraduate Degrees Awarded.](image)

* Some students of the graduating class were excluded due to the difficulty tracking data before 1999

Hispanic students can succeed at the same rate as any other students – at UTEP there is no difference between the proportion of the entering class that is Hispanic and the proportion of the graduating class that is Hispanic (see Figure VII-4).

**Figure VII-4: Hispanic Students in the Entering and Graduating Classes at UTEP**

UTEP has shown that it can become an emerging Texas Tier One university and that it will become a national research university by achieving and enhancing excellence (through its growth in graduates, in doctoral programs, and in research, scholarship and creative work) while at the same time expanding access. UTEP did not do it by changing the student populations it served – by changing the inputs, the raw material – because that was never the problem. The problem that UTEP recognized and tackled head-on was the gross under-estimation of that “raw material” and the misunderstanding of its promise. That’s why this Tier One opportunity and this Strategic Plan for Research are not a new vision for us – they are simply a continuation of the journey, an extension of educational opportunity to the highest level we can go. On the basis of the last twenty years, UTEP has the confidence that it will complete that journey with and for these students, not in spite of them.
For Texas, what does this mean? Closing the Gaps has shown that achieving equity in access and excellence is a long, hard process. It took UTEP twenty years to close its gap with its community. What happens to UTEP in the next decade will play a very large part in the national visibility of the Tier One and national research university effort in Texas. If UTEP is not sustained and advanced, if our performance fails, then the Tier One project in Texas will be sadly labeled, “Not for Hispanics.” But if UTEP emerges successfully as a recognized national research university, as we are confident that we will, then Texas will have achieved something no other state has done or even has on its agenda – it will have developed the first national research university serving a 21st century demographic.
Appendix A:

Trends in Degrees Awarded to Hispanics: Texas Emerging Research Universities, 2000-09

Figure A-1: Total Number of Degrees Awarded to Hispanics

The trend of sum of Degrees Awarded - Hispanic for FY Year. Color shows details about Institution.
Figure 2: Degrees Awarded to Hispanics as a Percentage of the Total Number of Degrees Awarded
Appendix B: The University of Texas at El Paso Endowed Faculty Positions

Alumni Academy of Civil Engineers Professorship in Civil Engineering
Market Value: $101,478.17
Book Value: $99,161.81
Purpose: Funds distributed from the endowment shall be used to support the Professorship, which is to be held by a faculty member in the Department of Civil Engineering.

AT&T Distinguished Professorship in the College of Business
Market Value: $273,910.97
Book Value: $252,655.18
Purpose: For the development of a new interdisciplinary master's degree in Information Technology.

AT&T Distinguished Professorship in the College of Engineering
Market Value: $291,336.76
Book Value: $252,847.59
Purpose: To support the recruitment and retention of faculty in the new Information Technology program.

Charles R. and Dorothy S. Carter Chair in Business Administration
Market Value: $1,407,952.77
Book Value: $578,515.22
Purpose: Funds distributed from this endowment supports a Chair position in the College of Business Administration for a faculty member with superior professional and academic credentials.

Chair for the Director of the Center for the Study of Western Hemispheric Trade
Market Value: $599,378.57
Book Value: $506,617.24
Purpose: Texas A&M Research Foundation will devote $1,000,000 of Center for the Study of Western Hemispheric Trade funding to assist in the establishment of four permanent endowments for the purpose of carrying on the programs
mandated by CSWHT’s authorizing legislation. The funding will be used to establish the Chair for the Study of Trade in the Americas in UTEP’s College of Business Administration ($600,000); the Professorship for Western Hemispheric Trade Policy Studies in UTEP’s College of Liberal Arts ($200,000); and two Professorships for faculty members engaged in Western Hemispheric Trade Research in a discipline to be determined ($100,000 each). Although federal funding for the CSWHT is authorized only through FY 1998, the language of the authorizing statute clearly indicates that an indefinite life of the Center’s mandated mission and activities is intended. The creation of these endowed positions will help fulfill this statutory intent. The doctrine of cy-pres shall apply to these funds should the purposes stated herein later become impossible, illegal, impractical, or no longer able to be carried out to meet the needs of The University of Texas at El Paso.

**Chair for the Study of Trade in the Americas**
- **Market Value:** $894,127.27
- **Book Value:** $629,771.32
- **Purpose:** Funds distributed from this endowment provides support for the Center for Study of Western Hemispheric Trade related activities, including compensation for highly qualified scholars.

**The Shigeko K. Chan Distinguished Professorship in Mathematical Sciences**
- **Market Value:** $306,871.13
- **Book Value:** $272,060.18
- **Purpose:** Funds distributed from this endowment shall be used to attract and/or retain talented and promising academicians in the field of mathematical sciences. The selected Professor will strive to make UTEP a premier institution of higher education.

**The Abraham Chavez, Jr. Professorship in Music**
- **Market Value:** $293,199.37
- **Book Value:** $157,862.29
- **Purpose:** Funds distributed from this endowment are used to support the individual named to fill the Abraham Chavez, Jr. Professorship in Music. It is anticipated that the individual named to the endowed professorship will continue to foster the partnership between the El Paso Symphony Orchestra Association and UTEP.

**Dr. C. Sharp Cook Chair in Physics**
- **Market Value:** $812,663.56
- **Book Value:** $539,256.41
- **Purpose:** Income earned from this endowment shall be used chiefly to supplement the salary of the holder of the professorship in the Department of
Physics, but will be available for other professional support, including assistance in the holder's research.

**Peter de Wetter Distinguished Professorship in Health Sciences**

- **Market Value:** $283,086.81
- **Book Value:** $264,101.59
- **Purpose:** Funds distributed from this endowment shall be used to attract and/or retain talented and promising academicians in the field of nursing and health sciences at UTEP.

**Richard M. and Frances M. Dudley Memorial Professorship**

- **Market Value:** $326,700.56
- **Book Value:** $136,811.95
- **Purpose:** The current estate proceeds will be used to establish a permanent endowed professorship in any academic area upon the appointment of the president at U.T. El Paso. Income earned from the endowment shall be used to supplement the salary and/or provide research support for a distinguished professor, either presently on the faculty, or who will be recruited to U.T. El Paso.

**George W. Edwards, Jr./El Paso Electric Distinguished Professorship in Engineering**

- **Market Value:** $250,000.00
- **Book Value:** $250,000.00
- **Purpose:** Funds distributed from the endowment will be used to support the Professorship in accordance with the Regents' Rules and Regulations pertaining to endowed academic positions. Endowment distributions will be used by the professor appointed as holder of the Professorship to support research and graduate student development in the areas of renewable energy or storage of energy.

**Orville Edward Egbert, M.D. Chair**

- **Market Value:** $571,152.64
- **Book Value:** $501,279.58
- **Purpose:** Funds distributed from this endowment shall be used to attract and/or retain talented academicians in the pre-med, nursing and health science fields who are involved in the preparation of students for careers in the medical profession.

**El Paso Community Professorship in Accounting**

- **Market Value:** $281,783.42
- **Book Value:** $126,520.50
- **Purpose:** Funds distributed from this endowment shall be used to attract and/or retain the highest quality academicians possible for the Department of Accounting. The holder of the Professorship will be a member of the faculty of the College of Business of superior professional and academic credentials, outstanding reputation.
in teaching and a reasonable period remaining in his/her professional career for a high-level educational contribution.

**El Paso Electric Company Professorship in Education Research**

**Market Value:** $115,429.93  
**Book Value:** $101,189.99  
**Purpose:** Funds distributed from the endowment shall be used to provide an interdisciplinary professorship for education research and graduate studies.

**Paul L. Foster and Alejandra de la Vega Foster Distinguished Chair in International Business**

**Market Value:** $1,000,000.00  
**Book Value:** $1,000,000.00  
**Purpose:** Funds distributed from the endowment will be used to support the Distinguished Chair in accordance with the Regents' Rules and Regulations pertaining to endowed academic positions. Endowment distributions will be used by the professor appointed as holder of the Distinguished Chair to support research and graduate student development in International Business.

**Freeport-McMoRan Copper & Gold Professorship in Metallurgical Engineering**

**Market Value:** $132,956.37  
**Book Value:** $113,448.14  
**Purpose:** Funds distributed from this endowment shall be used to recruit or retain a professor recognized for his/her outstanding academic accomplishments, or to attract a talented and promising academician in the early phase of his/her teaching career who will stimulate and promote excellence within the Metallurgical Engineering Department.

**Mimi Reisel Gladstein Professorship in American Literature**

**Market Value:** $100,000.00  
**Book Value:** $100,000.00  
**Purpose:** Funds distributed from the endowment will be used to support the Professorship at the discretion of the dean of the College of Liberal Arts and in accordance with the Regents' Rules and Regulations pertaining to endowed academic positions. The Professorship will be used to support research and graduate student development in American Literature.
Frank and Wilma Hanley Professorship in Business Administration
Market Value: $173,829.83
Book Value: $102,654.90
Purpose: Funds distributed from this endowment shall be used to support a professorship in the College of Business Administration. When the professorship is vacant, accumulated funds may be used, at the discretion of the Dean of the COBA, in whole or in part for equipment, facilities and other materials and services required to attract, recruit and retain a suitable candidate; otherwise, the accumulated income may be returned to the principal of the endowment fund.

Robert H. Hoy III Distinguished Professorship in Health Sciences
Market Value: $290,211.03
Book Value: $253,282.02
Purpose: Funds distributed from the endowment shall be used to attract and/or retain talented and promising academicians in the College of Health Science, with preference given to the field of nursing. Distributions from the Distinguished Professorship will reinvest until the endowment reaches a total book value of $250,000.

Marcus Jonathan Hunt Chair in International Business
Market Value: $500,000.00
Book Value: $500,000.00
Purpose: Funds distributed from the endowment will be used to support the Chair in accordance with the Regents' Rules and Regulations pertaining to endowed academic positions. Endowment distributions will be used by the professor appointed as holder of the Chair to support research and graduate student development in International Business.

JPMorgan Chase Bank Professorship in Business Administration
Market Value: $220,591.40
Book Value: $106,433.56
Purpose: Funds distributed from this endowment are used by the College of Business Administration to attract and retain the highest quality academicians possible. It is anticipated that a truly outstanding individual will become the Chase Bank Professor and that a search for this position should not exclude present members of the College of Business faculty. The Professor will strive to make the College of Business a premier institution and shall conduct a research program in business or undertake scholarly studies for publication and distribution, and teach in the College of Business. When the Professorship is vacant, the income from the Endowment shall accumulate for the benefit of the Professor.

June Sadowski Kruszewski Professorship in Theatre Arts
Market Value: $111,797.33
**Kruszewski Family Endowed Professorship in Political Science**

**Market Value:** $176,150.64  
**Book Value:** $107,575.13  
**Purpose:** This endowment will benefit the Department of Political Science at The University of Texas at El Paso. Funds distributed from this endowment are to allow a senior faculty member to pursue research in the sub-field of International Relations and Comparative Politics with a concentration in Border Studies. He or she should probably be a full professor or senior associate professor. The endowment is to allow the faculty member to continue his or her research and shall not be used for early retirement. This is not a lifetime professorship, but for a specific period subject to review by the Chairperson with advice from other senior faculty members.

**Charles H. and Shirley T. Leavell Endowed Chair II in Nursing and Health Sciences**

**Market Value:** $579,805.70  
**Book Value:** $506,401.16  
**Purpose:** Chair in Health Sciences.

**Charles H. and Shirley T. Leavell Endowed Chair in Nursing and Health Sciences #1**

**Market Value:** $905,450.91  
**Book Value:** $790,872.68  
**Purpose:** Funds distributed from this endowment support a Chair in the College of Health Sciences and functions as a salary supplement or for other purposes related to his/her work such as travel to professional meetings, support for a research assistant, specialized books or equipment. The recipient must report annually to the donors on the professional activity and/or accomplishments made possible by the additional support. Donors should also be consulted on the selection of the holder of the Chair.

**The Forrest O. and Henrietta Lewis Professorship of Electrical Engineering**

**Market Value:** $173,432.94  
**Book Value:** $105,915.82  
**Purpose:** Funds distributed from this endowment shall be used to recruit or retain a professor recognized for his/her outstanding academic accomplishments who
will stimulate and promote excellence within the Electrical Engineering Department.

**John T. MacGuire Distinguished Professorship in Mechanical and Industrial Engineering**

*Market Value:* $457,253.79  
*Book Value:* $263,099.93  
*Purpose:* Funds distributed from this endowment shall be used to establish an endowed professorship to enhance the teaching activities of the Department of Mechanical and Industrial Engineering as well as support the proposed doctoral program in the College of Engineering and that the holder of the position be normally expected to observe the minimum teaching load established by the Board of Regents of the University of Texas System.

**Betty M. MacGuire Distinguished Professorship in Business Administration**

*Market Value:* $457,498.02  
*Book Value:* $263,302.60  
*Purpose:* Funds distributed from this endowment shall be used to establish an endowed professorship to enhance the teaching and research activities of the College of Business Administration in the department or area where it will have the greatest beneficial impact.

**Samuel Shirley and Edna Holt Marston Professorship**

*Market Value:* $105,735.78  
*Book Value:* $100,939.09  
*Purpose:* Funds distributed from this endowment shall be used to attract and/or retain talented and promising academicians in the field of communication.

**Ellis and Susan Mayfield Professorship in Business Administration**

*Market Value:* $342,974.77  
*Book Value:* $167,969.86  
*Purpose:* Funds distributed from this endowment will support, in perpetuity, a chair of excellence for an outstanding professor and scholar whose teaching, research and writing will contribute to the economic development of the El Paso region. The holder of the chair may choose to take the distribution from the fund as a salary supplement or to use the earnings for other purposes related to his/her work (such as travel to professional meetings, support for a research assistant, specialized books or equipment). The recipient will report annually to donors in their lifetime and thereafter to their children on the professional activity and/or accomplishments made possible by this support. Donor will be consulted on the selection of the holder of the Chair.
Mr. and Mrs. MacIntosh Murchison Chair I in Engineering
Market Value: $1,298,979.28
Book Value: $541,269.01
Purpose: Funds distributed from this endowment shall be used for the opportunity to recruit to the faculty, an outstanding researcher in the field of manufacturing engineering and/or material science. This individual would serve as a leader of the research team around which the proposed institute for advanced manufacturing and materials will be built at some later date. This Chair in the College of Engineering will also be used to support the proposed doctoral program for the College of Engineering.

Mr. and Mrs. MacIntosh Murchison Chair in Engineering II
Market Value: $1,237,359.50
Book Value: $539,311.58
Purpose: Funds distributed from this endowment shall be used to establish a second Murchison Chair in Engineering at UTEP. Special stipulations if vacant.

Mr. and Mrs. MacIntosh Murchison Chair in Engineering III
Market Value: $1,222,690.56
Book Value: $538,845.66
Purpose: Funds distributed from this endowment shall be used to support outstanding faculty members whose work will contribute to the economic development and progress of this region and that the holders of the chair be involved in the teaching of undergraduate students, as well as committed to the development and implementation of a proposed doctoral program in the College of Engineering. It is the donor's desire to insure the integration of the two principle functions of this institution, namely, teaching and research.

Mr. and Mrs. MacIntosh Murchison Chair in Engineering IV
Market Value: $1,222,690.56
Book Value: $538,845.66
Purpose: Funds distributed from this endowment shall be used to support outstanding faculty members whose work will contribute to the economic development and progress of this region and that the holder of this chair be involved in the teaching of undergraduate students, as well as committed to the development and implementation of a proposed doctoral program in the College of Engineering. It is the donor's desire to insure the integration of the two principle functions of this institution, namely, teaching and research.

Lloyd A. Nelson Professorship in Geology
Market Value: $343,405.85
Book Value: $126,704.73
Purpose: Funds distributed from this endowment shall be used to add to a regular budgeted salary to enable UTEP to install an eminent Geologist as the "Lloyd A. Nelson Professor of Geology."

Professorship for Border Trade Issues
Market Value: $121,889.89
Book Value: $101,345.70
Purpose: Funds distributed from this endowment will be designated for the faculty member in the Center for InterAmerican and Border Studies who is appointed by the president.

Professorship for Western Hemispheric Trade Policy Studies
Market Value: $290,015.73
Book Value: $203,201.81
Purpose: Texas A&M Research Foundation will devote $1,000,000 of Center for the Study of Western Hemispheric Trade funding to assist in the establishment of four permanent endowments for the purpose of carrying on the programs mandated by CSWHT's authorizing legislation. The funding will be used to establish the Chair for the Study of Trade in the Americas in UTEP's College of Business Administration ($600,000); the Professorship for Western Hemispheric Trade Policy Studies in UTEP's College of Liberal Arts ($200,000); and two Professorships for faculty members engaged in Western Hemispheric Trade Research in a discipline to be determined ($100,000 each). Although federal funding for the CSWHT is authorized only through FY 1998, the language of the authorizing statute clearly indicates that an indefinite life of the Center's mandated mission and activities is intended. The creation of these endowed positions will help fulfill this statutory intent. The doctrine of cy-pres shall apply to these funds should the purposes stated herein later become impossible, illegal, impractical, or no longer able to be carried out to meet the needs of The University of Texas at El Paso.

Rho Sigma Tau-Robert L. Schumaker Endowed Professorship in Physics
Market Value: $222,368.34
Book Value: $107,569.46
Purpose: Funds distributed from this endowment shall be used to recognize and reward a faculty member from the Department of Physics who shall be chosen solely for his/her excellence in teaching, with all other considerations of professional achievement secondary to a record of meritorious and effective teaching. The holder of the professorship may supplement his/her salary on an annually determined and budgeted basis, provide for his/her summer employment or make purchases or engage in activities which will enhance his/her teaching performance or assist in the improvement of teaching effectiveness of other faculty members in the Department of Physics.
Riter Endowed Professorship in Engineering
Market Value: $125,156.50
Book Value: $128,769.24
Purpose: Funds distributed from the endowment shall be used to support the Professorship as it is the donors' intent that the Dean of the College of Engineering be appointed to this professorship in order to promote and enrich the teaching and research activities in the College of Engineering.

Dorrance D. Roderick Foundation Professorship in English
Market Value: $277,919.93
Book Value: $149,719.73
Purpose: Funds distributed from this endowment shall be used to provide a salary for the Professorship in accordance with Chapter I, Section III, paragraph 3.4 of the Rules and Regulations of the University of Texas System.

Schellenger Professorship in Electrical Research
Market Value: $416,436.94
Book Value: $146,079.10
Purpose: Funds distributed from this endowment shall be used by a faculty member occupying the professorship to stimulate and promote funded research by providing seed money, travel, wages and salaries for support staff. Future income from the original Trust will continue to be used, as in the past, for equipment and maintenance required for research in electricity.

Robert E. and Jacqueline Skov Endowed Professorship in Business Ethics
Market Value: $124,075.99
Book Value: $101,369.82
Purpose: Said gifts shall be used to create the Robert E. and Jacqueline Skov Endowed Professorship in Business Ethics for the College of Business Administration as a permanent endowment. Funds distributed from this endowment shall be used to attract and/or retain talented and promising academicians who will research, design, implement, and teach undergraduate courses addressing fundamental values and ethics for future business leaders. It is our desire that, with the assistance provided by this professorship, the designated professor will help students who graduate from the UTEP College of Business Administration appreciate the value of conducting business honorably and ethically.

J. Edward and Helen M.C. Stern Endowed Professorship in Nursing
Market Value: $101,625.39
Book Value: $107,257.68
Purpose: Funds distributed from this endowment shall be used to attract and/or retain talented and promising academicians in the field of nursing.

**J. Edward and Helen M. C. Stern Endowed Professorship in Neuro-Science**

- **Market Value:** $466,670.06
- **Book Value:** $255,203.10

Purpose: Said funds shall be used to create the J. Edward and Helen M. C. Stern Endowed Professorship. Income from the fund shall be used to support an individual whose scholarship and/or research focuses on the basic and applied neuropsychiatric sciences and related or associated fields and areas of interest.

**The Helen M. C. Stern and J. Edward Stern Endowed Professorship in Psychology**

- **Market Value:** $195,158.49
- **Book Value:** $119,324.19

Purpose: The funds shall be used to create The Helen M. C. Stern and J. Edward Stern Endowed Professorship in Psychology. Income from the fund shall be used to recruit or retain a professor recognized for his/her outstanding academic accomplishments who will stimulate and promote excellence within the Psychology Department.

**Dr. Arleigh B. Templeton Professorship in Financial Management and Banking**

- **Market Value:** $494,311.47
- **Book Value:** $179,178.03

Purpose: Funds distributed from the endowment shall be used to support the Professorship in financial management and banking.

**Texas Instruments Foundation Professorship in Digital Signal Processing**

- **Market Value:** $216,441.32
- **Book Value:** $202,389.54

Purpose: To provide support to Faculty in Digital Signal Processing.

**The Dr. and Mrs. W. H. Timmons Borderlands History Professorship**

- **Market Value:** $184,802.90
- **Book Value:** $126,876.18

Purpose: Annual distributable income is to be used to support the Ph.D. program in Borderlands History at UTEP.

**Untitled Professorship #2 in Western Hemispheric Trade Research**

- **Market Value:** $145,004.93
- **Book Value:** $101,600.85

Purpose: Texas A&M Research Foundation will devote $1,000,000 of Center for the Study of Western Hemispheric Trade funding to assist in the establishment of four permanent endowments for the purpose of carrying on the programs.
mandated by CSWHT's authorizing legislation. The funding will be used to establish the Chair for the Study of Trade in the Americas in UTEP's College of Business Administration ($600,000); the Professorship for Western Hemispheric Trade Policy Studies in UTEP's College of Liberal Arts ($200,000); and two Professorships for faculty members engaged in Western Hemispheric Trade Research in a discipline to be determined ($100,000 each). Although federal funding for the CSWHT is authorized only through FY 1998, the language of the authorizing statute clearly indicates that an indefinite life of the Center's mandated mission and activities is intended. The creation of these endowed positions will help fulfill this statutory intent. The doctrine of cy-pres shall apply to these funds should the purposes stated herein later become impossible, illegal, impractical, or no longer able to be carried out to meet the needs of The University of Texas at El Paso.

**Untitled Professorship #1 in Western Hemispheric Trade Research**

**Market Value:** $145,004.93  
**Book Value:** $101,600.85  
**Purpose:** Texas A&M Research Foundation will devote $1,000,000 of Center for the Study of Western Hemispheric Trade funding to assist in the establishment of four permanent endowments for the purpose of carrying on the programs mandated by CSWHT's authorizing legislation. The funding will be used to establish the Chair for the Study of Trade in the Americas in UTEP's College of Business Administration ($600,000); the Professorship for Western Hemispheric Trade Policy Studies in UTEP's College of Liberal Arts ($200,000); and two Professorships for faculty members engaged in Western Hemispheric Trade Research in a discipline to be determined ($100,000 each). Although federal funding for the CSWHT is authorized only through FY 1998, the language of the authorizing statute clearly indicates that an indefinite life of the Center's mandated mission and activities is intended. The creation of these endowed positions will help fulfill this statutory intent. The doctrine of cy-pres shall apply to these funds should the purposes stated herein later become impossible, illegal, impractical, or no longer able to be carried out to meet the needs of The University of Texas at El Paso.

**Wakefield Endowed Professorship in Health Sciences**

**Market Value:** $120,548.07  
**Book Value:** $101,982.29  
**Purpose:** To attract and/or retain talented and promising academicians in the health sciences. The professor will strive to make UTEP a premier institution and shall conduct research in health sciences or undertake professional studies for publication or distribution, in addition to teaching in the College of Health Sciences.
The Robert A. Welch Chair in Chemistry

Market Value: $1,178,065.43
Book Value: $1,019,814.41

Purpose: To provide a faculty position for an active, effective research scientist of good standing, thus further increasing the level of basic scientific research in chemistry and allied sciences in the state.

Wells Fargo Endowed Professorship of Financial Services

Market Value: $129,427.13
Book Value: $102,865.88

Purpose: This Professorship will be used to attract and/or retain talented and promising academicians who will design, implement, and teach courses that give students skills in financial services, and perform research in related areas.

Patricia Daw Yetter Professorship

Market Value: $100,094.07
Book Value: $103,720.96

Purpose: Funds distributed from the endowment shall be used to support a professorship.