

Report
of
The Washington Advisory Group, LLC
on
Research Capability Expansion
for
The University of Texas System

**The University of Texas at Brownsville/
Texas Southmost College**

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**Report of The Washington Advisory Group on
Research Capability Expansion for
The University System of Texas
At Brownsville/Texas Southmost College (UTB/TSC), Pan American (UTPA),
of the Permian Basin (UTPB), and at Tyler (UT-Tyler)**

INTRODUCTION

The Washington Advisory Group (WAG) was engaged by the University of Texas System (UT System) to examine the research capacities and potential for expansion at eight of the UT System institutions. WAG divided the eight institutions into two groups and established teams to work with each of the two groupings. This report is the second of two reports and focuses on the four smaller, developing institutions listed in the report title.

As in its review of the larger institutions, our WAG team was asked to review information provided by the universities as well as information gathered independently before and after each visit. Appendix 1 details the scope of work for this study, including six questions to be addressed for all of the universities and four questions specific to each of the developing institutions reviewed in this report.

We held meetings with administrators, an array of faculty from many disciplines, community and business leaders, and periodically with students. Based on our review, the discussions and materials, and reports developed by each team member around the university he or she visited, we developed the individual reports that examine similar factors at each of these developing institutions.

Appendix 2 contains the biographical sketches of the team of individuals that carried out this project. We selected the members of this team based on criteria tailored to a review of developing institutions, including knowledge about university research and federally funded research; broad experience at and knowledge about community colleges, which are critical to each of the universities we visited; small college backgrounds; strong interests and expertise in minority-related issues and programs; and experience with economic development issues. We also chose at least some team members with specific backgrounds related to Texas. The goal was to provide a review team with the collective judgment, background, experience, and expertise to offer the UT System an authoritative review and assessment. Appendix 3 provides the dates and a broad overview of each of the visits to the four universities covered in this report.

Overview

The developing institutions we studied have varied strengths, but will have to make considerable strides to attain national and international research stature. According to the National Science Foundation's rankings of universities, only one of the four institutions in this report ranks among the top 589 colleges and universities in research expenditures for FY2000. With total research expenditures of \$1.6 million that year, UT-Pan American (UTPA) ranks 378th. By contrast, the four larger Texas universities WAG studied all rank among the top 250 universities. Clearly, the four developing or emerging campuses occupy a different range on the research spectrum. The research expenditures of the smallest of the larger campuses (UT-San Antonio), for example, totaled \$11.3 million in FY2000, while research expenditures at the largest of the emerging campuses (UTPA) totaled approximately \$2 million.

Using FY2002 data, the Texas Higher Education Coordinating Board more recently provided a basis for reviewing several developing universities in Texas (see Table 1 below). In FY2002, UTPA research expenditures totaled \$2.6 million; UT-Brownsville/TSC's (UTB/TSC) reached \$1.3 million, and UT-Permian Basin (UTPB) and UT-Tyler's reached \$980,000 and \$375,000, respectively.

Table 1. Research Effort and Sponsored Programs
(Total Expenditures for Research and Other Research-Related Sponsored Programs by Source of Funds, FY02)¹

University	Total
Stephen F. Austin	\$5,583,051
UT-Brownsville/TSC	\$1,286,638
UT-Permian Basin	\$ 980,905
UT-Pan American	\$2,605,758
University of Houston Downtown	\$1,270,494
Texas A&M International	\$ 677,346
UT-Tyler	\$ 375,821
Texas A&M Commerce	\$ 629,496

It is also worth considering the status of the four institutions' research strength in terms of the Carnegie Foundation classifications.² UTPA is the farthest along with its doctorate program in business and imminent doctoral program in education. Its next doctoral programs are likely to be in science/engineering, as a new dean is actively focusing on adding to the strength of the research faculty. This focus is worthwhile for its own sake and is relevant to the Carnegie rankings.

Research activity could perhaps be most enhanced via collaboration with co-located Regional Academic Health Center (RAHC) facilities. The new UT System executive vice

¹ Source: Texas Higher Education Coordinating Board, *Research Expenditures (FY02)*, Total Expenditures for Research and Other Research-Related Sponsored Programs by Source of Funds, FY02, Institutional Research and Planning, 09/25/03.

² The Carnegie classifications can be found at: <http://www.carnegiefoundation.org/Classification/>. They are as follows:

Doctorate-granting Institutions

Doctoral/Research Universities-Extensive : These institutions typically offer a wide range of baccalaureate programs, and they are committed to graduate education through the doctorate. During the period studied, they awarded 50 or more doctoral degrees per year across at least 15 disciplines.

Doctoral/Research Universities-Intensive : These institutions typically offer a wide range of baccalaureate programs, and they are committed to graduate education through the doctorate. During the period studied, they awarded at least ten doctoral degrees per year across three or more disciplines, or at least 20 doctoral degrees per year overall.

Master's Colleges and Universities

Master's colleges and Universities I: These institutions typically offer a wide range of baccalaureate programs, and they are committed to graduate education through the master's degree. During the period studied, they awarded 40 or more master's degrees per year across three or more disciplines.

Master's Colleges and Universities II: These institutions typically offer a wide range of baccalaureate programs, and they are committed to graduate education through the master's degree. During the period studied, they awarded 20 or more master's degrees per year.

chancellor for health affairs should make considering such opportunities a priority. In fact, in their strategic review, the System chancellor and vice chancellors might consider whether the RAHC located at UTPA, the one located on the UTB campus, and the RAHC in nearby Harlingen could jointly collaborate with research programs at both UTPA and UTB. Such an arrangement could significantly boost the research activity of all parties on a mosaic of projects. With a successful outcome, both UTPA and UTB could achieve the Carnegie classification of Doctoral/Research Universities-Intensive within a ten-year planning horizon.

Similarly, a significant opportunity for research collaboration between UT-Tyler and UT Health Center-Tyler (UTHC-Tyler) is under discussion at the highest levels of their administrations. The UT-Tyler report covers the details of this discussion and its robust potential for both institutions. Although the level of externally funded research at UT-Tyler is quite low, the institution has already positioned itself for a quantum leap in active research projects via collaborations with UTHC-Tyler. Our optimism about this potential growth is based in part on UT-Tyler's track record in research collaborations with other more distant research partners, including Texas A&M University, Stephen F. Austin University, and the National Aeronautics and Space Administration. While the metrics for UT-Tyler do not yet show their full impact because these collaborations are credited to the partner institutions, the collaborations provide UT-Tyler with a growing and effective means to bootstrap its research future. UT-Tyler could well achieve Doctoral/Research Universities-Intensive Carnegie classification within a decade. All UT System institutions would benefit if the system began facilitating and rewarding such collaborations in its strategic planning.

In the two Carnegie classifications for Master's Colleges and Universities, all four of the campuses seem positioned to exceed the minimums.³

In general, these emerging institutions recruited their faculty to deal with the crush of entering undergraduate students in several of the most economically challenged regions of the state: East Texas, West Texas, and particularly South Texas. These are largely non-traditional students, meaning students who are employed in part- or full-time jobs, daily commuters to campus, or supporting families, in addition to often being first-generation college students. As a result, the enrollment at these institutions continues to increase rapidly, and students face extreme pressures in meeting the time commitments of college work, whether for instruction or research. Yet, in all four of the emerging institutions, some faculty have dealt with the instructional loads and successfully developed and sustained nationally competitive research projects. These exemplary faculty provide a benchmark for the research future of the four emerging campuses.

It is important for these four developing institutions to pursue research at the same time that they must succeed in educating a population so desperately requiring a college education. An institution that makes its primary contribution to a community by educating its children—children for whom education is the primary hope for a better life—may believe that research activities detract from its mission. This education brings value to the students and their futures, as well as the futures of their families and communities. UTPA and UTB/TSC, for example, provide a vital service to Texas with their work on its southern border, albeit a perhaps different service than more research-intensive institutions in the UT System. So why should the same institutions that provide this crucial educational service also focus on research? We suggest there are several answers:

³ See Carnegie definitions in footnote 2.

- First, these regions of Texas face major issues research can address including health, K-12 education, and indigenous business development. Three of the four campuses, for example, reside near parts of the UT Health Center complex. All three of these health-related centers can multiply their beneficial affects to the state via selected collaborative research projects with neighboring UT campuses, both in public health areas and through the eventual commercialization of intellectual property that the sponsored research will likely generate. To be specific, UT-Tyler is near the UT Health Center-Tyler; UTPA is co-located with RAHC facilities associated with the UTHSC-San Antonio; and the RAHC at UTB/TSC is affiliated with the UTHSC-Houston.
- Second, educational research conducted and applied with the schools of the region—particularly if it focuses on improving the quality and quantity of college-prepared high school graduates—will directly improve the region’s economic strength and vitality. Virtually all of the students entering these institutions have graduated from the region’s high schools or community colleges; most will choose to remain in the area. Students at these campuses have also had many opportunities to pursue higher learning in part because of early outreach programs, including GEARUP⁴, TRIO⁵, and similar national programs designed to improve educational effectiveness with at-risk populations, and these programs often get implemented through cooperative projects between schools or colleges of education and K-12 school systems. Further, virtually all of the teachers in the K-12 schools around these developing institutions received their education and professional training at regional UT campuses.
- Finally, the colleges of business at these emerging campuses can have a disproportionately positive effect on the success of businesses in their regions. For example, these colleges can influence practice through research that speeds the development of new businesses and improves the competitiveness of existing businesses. The College of Business at UTPA is already engaged in such research through its doctoral program. In addition, the UTPB business dean, one of the most published scholars at that University, has set a standard of research and refereed research publication that is a model for her colleagues across the campus.

We should also note that the civic and political leaders of each region expect the local university to play a critical part in their community’s growth and development. This was clear in the personal meetings the WAG team held with the community leaders in each region. It is no wonder they feel so strongly. Each university ranks as one of the largest employers and purchasers of goods and services in its region, and educates or provides professional certification for many if not most of the indigenous workers in the region.

But the mutually beneficial research projects in health, education, and business relate by no means exclusively to the state’s three less-developed regions. As the reports indicate, each campus has a number of other research bright spots. The detailed campus reports describe other

⁴ The GEARUP (Gaining Early Awareness and Readiness for Undergraduate Programs) program is a discretionary grant program funded by the U.S. Department of Education designed to increase the number of low-income students who are prepared to enter and succeed in post-secondary education.

⁵ TRIO refers to a series of programs funded under Title IV of the Higher Education Act of 1965 to help low-income Americans enter college, graduate and move on to participate more fully in America’s economic and social life.

benchmark opportunities in the sciences, engineering, and mathematics—as well as humanities and the arts.

In summary, we would prioritize the ideal objectives of each of the emerging campuses as follows:

1. Educate largely non-traditional students.
2. Continually develop selective, high-quality research programs.
3. Actively participate in the economic development of their communities.
4. Engage in programs of community service for the citizens of their region with special needs.

The campuses must succeed at the first priority to achieve the second. Success in the latter two priorities also requires success in both the first and second. All four campuses are making transitions in dealing with these priorities and would benefit from the UT System's advice and support.

The campuses will probably face their toughest decisions when choosing which areas of research they can develop to a competitive level while maintaining the high quality of their educational programs. They will have to choose carefully to avoid research tracks in which they are unlikely to be competitive. But it is doubtful the educational programs can approach or maintain competitiveness without a critical mass of relevant and respected research programs. Without such a critical mass, neither the best senior faculty nor the best young faculty can be recruited or will stay. The same goes for the best students, a pool of talent these regions should fight to keep.

Some Aggregated Perspectives

The four developing institutions covered in this report and the four larger UT institutions reviewed separately share some similarities. In the report on the larger universities, under “The Path to Tier 1 Status,” we note several issues that will determine how institutions will progress and succeed in reaching the Tier 1 goal. While the institutions covered in this report do not seek that lofty accomplishment, the issues addressed for the larger institutions apply as well to these developing institutions, if to a lesser degree. For example, the point about the need for a strategic plan in the larger institutions also applies to the emerging institutions. Likewise, since the emerging institutions are unlikely to see increases in state appropriations, they also must identify new resources to fund increased research capacity. Similarly, because of state resource constraints, the emerging institutions must also seek increased funds from the same sources as their larger peers, including the federal government, industry, alumni and foundations, and tuition and fees.

All UT institutions also face the same pressures in recruiting faculty and competing with other institutions inside and outside the state for talent. No matter the campus, it is costly to recruit faculty. And the emerging institutions, like their larger peers, must encourage and foster a faculty research culture. In this respect, the System might consider establishing a research professorship program to provide additional supplemental support and statewide recognition to all campuses attempting to hire outstanding research faculty.

As noted with the larger institutions, unproductive competition and historical strife seriously hinder relationships between the institutions, particularly UTPA and UTB/TSC. Their

individual and collective future would improve if collaboration replaced virtual non-communication. New leadership at UTPA offers that possibility. The WAG teams agree that, no matter how large the institution within the UT System, it would benefit from research and educational collaborations. The emerging institutions have fine examples of such activities, including with community colleges, other academic institutions, industry, federal agencies, and state and local governments. We strongly encourage collaborations, not least because they foster intellectual breadth and lead to stronger proposals for support and stronger final projects.

Our team and the individual reports also lead us to conclude that new graduate programs at the emerging institutions, particularly at the Ph.D. level, should develop in a highly selective fashion. Professional master's degree programs should only be instituted where they can be justified. In several instances, the emerging institutions have programs of national stature and distinction, such as gravitational wave physics at UTB/TSC; nursing at UT-Tyler; and the arts facility at UT-Permian Basin to name a few. But issues of national recognition are less paramount with the emerging institutions. These institutions would be more likely to achieve success and add optimum value within their region and Texas by focusing on programs the region needs rather than on the national stage.

Though technology transfer will play a more significant part in the immediate future of the larger and more developed institutions, the developing institutions also may well have opportunities to commercialize intellectual property and potentially stimulate the creation of new companies. If they do so, the developing institutions could have a more significant impact on both the type and scale of economic development in their regions.

The reports on the developing institutions in the UT System that follow discuss each of the four institutions in substantial detail.

**THE UNIVERSITY OF TEXAS AT BROWNSVILLE/
TEXAS SOUTHMOST COLLEGE (UTB/TSC)**

Overview and Mission

TEXAS SOUTHMOST COLLEGE

When Texas Southmost College began as the Junior College of the Lower Rio Grande Valley in September 1926, it enrolled 84 students. In 1931, when the institution changed its name to Brownsville Junior College, it had a faculty/staff of 20, and enrollment stood at 224 students. The next year, enrollment declined to 161. Enrollments continued to decline during World War II. But by 1945-46, large numbers of soldiers returned from the war and the college's enrollment surged. In 1948, in a move of great significance and importance to institutional expansion, the campus moved to Fort Brown, the current home of the partnership institutions. In 1949, the junior college became Texas Southmost College (TSC). The same year, the decision was also made to form a governing district for the college separate from that of the school district.

During the ensuing years, the college broadened its mission and goals, enrollment grew by 30 percent, the operations of the institution's board changed markedly, and several changes in institutional leadership occurred. Finally, in April 1986, Dr. Juliet García, then dean of arts and sciences at TSC, was inaugurated as president.

UNIVERSITY OF TEXAS AT BROWNSVILLE

In 1973, the Pan American University Extension Center opened its doors on the Brownsville campus of TSC. In September 1977, Pan American University at Brownsville became the successor to the extension center. In May 1989, a bill from the Texas Legislature became law and made Pan American University at Brownsville a formal part of the UT Texas System and re-named the institution the University of Texas-Pan American at Brownsville. In September 1991, after considerable debate in the legislature and elsewhere, the institution officially became the University of Texas at Brownsville. Dr. Homer Pena became the institution's founding president. In January 1992, Dr. Juliet García, formerly TSC's president, succeeded him. In 1997, UTB/TSC received approval to add lower-division courses.⁶

UTB/TSC TODAY

UTB/TSC's academic programs are organized into three schools (business, education, and health sciences) and two colleges (the College of Liberal Arts and the College of Science, Mathematics, and Technology). Its budget for FY04 is almost \$90 million, about one-quarter of which is expected from tuition and fees and about 40 percent of which comes from state appropriations; the remainder comes from grants and contracts, Pell Grants, and other sources.

In 1992, slightly more than a decade ago, UTB and TSC formed a partnership that brought together an upper-level university with an open admissions community college. Under the partnership agreement, TSC continues to own the campus, and today owns all but two (science and technology and health sciences) of the campus buildings. UTB/TSC reports to the Regents of the UT System as well as to the TSC Board of Trustees. While being accountable to two sets of trustees no doubt has its disadvantages, the partnership has brought significant

⁶ This historical information draws heavily upon Carl S. Chilton Jr.'s *The Community's University: Origin and Progress (A History of UTB/TSC)*. UT Brownsville and Texas Southmost College, 2002.

benefits; two positive examples include access to each other's physical facilities and the TSC Board's authority to levy taxes. The latter provides flexibility in decision-making and acquiring land to accommodate campus growth as well as assuring continued strong community support.

UTB/TSC's mission is:

to meet the needs of the South Texas Border Region and Lower Rio Grande Valley by providing: accessible, affordable, post secondary education of high quality; research to expand knowledge; programs of continuing education, public service, and cultural value.

UTB/TSC has carried out its mission extremely well: it has provided quality undergraduate education to its atypical student body as well as a community-college level education to a large percentage of its population. Over 7,800 of the students are enrolled at the lower level and 2,800 at the upper level of the undergraduate program. Slightly less than 800 students are enrolled at the graduate level.

The need among UTB/TSC students for remedial courses is also diminishing. For instance, campus representatives reported that in 1995, 96 percent of incoming students had taken some form of remedial coursework at UTB/TSC. In 2002, the proportion of incoming freshmen taking remedial coursework had dropped to 52 percent. Though the initial cohort of students who began in the GEARUP program⁷ in the mid-1990s has not reached college age, indications are that this and other outreach efforts are improving the quality of preparation students receive prior to entering college.

The student profile of UTB/TSC resembles the demographics of Cameron County where the institution is located. The county's population is heavily Hispanic and classified as one of the nation's fastest-growing counties and also one of the poorest counties. At UTB/TSC, almost 92 percent of the student population is Hispanic, 61 percent are women, and the average student age is almost 26 years. Seventy percent of the students receive some financial aid.⁸ Almost 20 percent of the students at UTB/TSC are single parents.

UTB/TSC clearly serves mostly non-traditional students. The institution also has unique successes doing so. It ranks 26th in the nation and 7th in Texas as a producer of Hispanics with graduate degrees. It also ranks 3rd in the nation for graduating Hispanics with degrees in foreign language and 2nd in the nation for graduating Hispanic with baccalaureate degrees in mathematics.⁹

Still, its students continue to face major hurdles. With a median income per household in Cameron County of \$26,155 in 1999, the institution's home county ranks second only to Hidalgo County (where UTPA is located) as the lowest per-capita income among all counties in Texas. Since most UTB/TSC students come from Cameron County, the average financial aid need per student is \$10,332. But the average package available per student is only \$6,408.

⁷ The GEARUP (Gaining Early Awareness and Readiness for Undergraduate Programs) program is a discretionary grant program funded by the U.S. Department of Education designed to increase the number of low-income students who are prepared to enter and succeed in post-secondary education.

⁸ Source: *2001 Headcount Enrollment by Classification, Gender, Ethnic Origin*, Texas Public Universities, fall 2001.

⁹ "Closing the Gaps: UTB/TSC," UTB-CBIRD Report: *At the Crossroads*, 2002, p. 68.

Meanwhile, the college-going rate in South Texas remains at 15 percent, in contrast to the statewide rate of 30 percent. To close the participation rate, UTB/TSC would have to double its enrollment to 20,000 students by 2010. This presents a dire challenge given Brownsville's economic predicament, as noted above.¹⁰

UTB/TSC: A UNIQUE GOVERNANCE STRUCTURE

The partnership between UTB and TSC began in 1991 to maximize and bring additional educational opportunities to the communities of the Lower Rio Grand Valley. At that time, TSC was the state's second oldest community college, and UTB was the state's newest freestanding university. The partnership was intended to offer students a seamless educational process by eliminating artificial barriers for transferring between two institutions located on the same campus, while fulfilling the distinctive responsibilities of each type of institution.

The two partners maintained their separate boards as they consolidated personnel, policies, and procedures; they also established a traditional organizational structure for operation of the partnership. The 1992-93, the University Catalog contained a single mission statement for the partnership and said that the UTB/TSC partnership created "America's first Community University." The partnership created a single operating entity, a single admissions process, and a single faculty that, in effect, merged the two institutions. The UTB/TSC partnership is unique in American higher education and provides the best of both worlds for the institution.

While the two governing boards each retain their statutory responsibilities, the Partnership Agreement holds that a subset of three members of the nine-member UT System Board of Regents and three members of the seven-member TSC Board of Trustees constitute the "Partnership Governing Board." That board, which meets regularly, discusses, and resolves issues related to the partnership between the two institutions.

In 1999, the TSC Board and the UT Board of Regents signed an agreement to continue the partnership for 99 years. Chapter 51 of the Texas Education Code also provides for the governing board of each institution to appoint members to a Partnership Advisory Committee, which meets annually, and is composed of three members from each board. This committee makes recommendations concerning the development of coordinated programs and services to meet the needs of the affected communities.

The partnership also works because of President García and a committed, hard-working TSC Board of Trustees. In this regard, we want to cite the contribution of the present leadership and members of the Board of Trustees and the historical involvement of Ms. Mary Rose Cardenas, whose leadership and commitment to the partnership are particularly noteworthy.

The eight-year partnership has been successful, as the growth and viability of the institution suggest; for example:

- The combined resources have created 19 new degree programs.
- For the longer term, the partnership intends to initiate new occupational-technical programs as business developments in the South Texas border region require.

¹⁰ Material provided to WAG from UTB/TSC, particularly UTB-CBIRD Report, *At the Crossroads*, pp.62-69.

- Through new distance-learning technologies, the institution has begun the first on-line degree of the UT telecampus, the educational technology master's degree.

We must also note that the boundaries and service areas of UTB/TSC have expanded since the partnership began, and the institution has established links with other UT System institutions and with Mexico and Mexican institutions of higher education.¹¹

UNIVERSITY LEADERSHIP TEAM

This may be an appropriate place to provide our views on President García and her leadership team. UTB/TSC has a president who has vision and stature, and who recognizes that Hispanic students should play an increasing role in Texas and the country as a whole. Her focus on melding the strengths of a junior college with the potential of a university is remarkable. She understands the scope of benefits the UTB/TSC can bring to the economic development of the border region of Southeast Texas—an area that desperately needs improved educational opportunities—and ultimately of Texas and the nation. The provost, Dr. José Martín, is also a remarkable and creative administrator. His innovations in encouraging faculty, expanding capacity, and getting more from less in the recent budget environment are a credit to him and the institution. The other senior leaders at UTB/TSC are also of high quality. President García should be commended for assembling a first-rate leadership team.

The University, under President García's leadership, would greatly benefit from additional commitments and support from the state and the UT System. Her interest—actually her passion—in wanting to close the gap among the institutions of higher learning in Texas, as well as among the different economic, geographic, and ethnic groups within the state, deserves serious attention among decision-makers. The state does face an era of constrained resources and, by 2010, the huge wave of college students is expected in Texas. But in President García, Texas has a dedicated and talented leader, and decision-makers should work with her and her colleagues to craft solutions to these important issues.

Current Research and Educational Strengths and New Opportunities

COLLEGE OF SCIENCE, MATHEMATICS, AND TECHNOLOGY

The faculty in the College of Science, Mathematics, and Technology is the strongest on campus in academic/research qualifications, securing external support, and research productivity. Strong research programs are underway in the Departments of Biological Sciences as well as in Physics and Astronomy which also provide opportunities for undergraduates to participate in research.

Department of Physics and Astronomy

Since 1996, the Department of Physics and Astronomy faculty has quadrupled in size, from two to eight faculty. This expansion resulted from external and competitive grants that supported the hiring of the new faculty. Provost Martín's offer to convert any grant-supported

¹¹ UTB/TSC Office of Data Management and Reporting. Institutional Profile (Fall 1998-Summer 2001), 8/4/03. "History and Operation of the UTB/TSC Partnership." Also the informative and interesting book by Carl S. Chilton, Jr. *The Community's University: Origin and Progress (A History of UTB/TSC)*. Published by UTB/TSC, 2002, was most useful in this history. Also "Partnership Overview" section of *Agency Strategic Plan for the 2001-2005 Period*, UTB/TSC, pp.4-8.

faculty position into a permanent faculty line following four years of external support is innovative and offers a major incentive for faculty to aggressively seek outside funds. In our judgment, this approach is a model that should be replicated more broadly within the UTB/TSC community and the UT System. To be successful, it would require remarkable faculty. At UTB/TSC, Professor Mario Diaz is such an individual. (Dr. Diaz and his group recently were awarded a \$5 million NASA grant to create the Center for Gravitational Wave Astronomy.) When fully implemented, Provost Martín's approach will offer a key strategy for retaining superb faculty, sustaining strong programs, and appealing to prospective funding officials. It also provides a means to significantly increase research capacity in an era of constrained resources.

We also heard concerns about the unusual arrangement in physics: on the campus, UTB/TSC physics faculty offer courses for master's degree students who later receive their master's degrees from the University of Texas at El Paso. These graduates are counted as UTEP alumni even though they have received their coursework and training on the UTB/TSC campus. This situation will be remedied with the recent approval of a Master of Science degree in physics for the UTB/TSC campus (approval provided by the Coordinating Board on January 29, 2004). Demand for this master's program is expected to continue as the number of UTB/TSC students pursuing the B.S. degree in physics increases. We were most impressed with this department and its diligence in securing the support for this important master's program. As the program grows in size and stature, it will continue to improve.

Department of Mathematics

In discussions with several faculty in the Department of Mathematics, we were told that five of the 22 members of the department's faculty actively engage in research. One of these faculty has established an Honors Mathematics Group which currently has 10 members. This group could be the focus of a concerted departmental effort to get more of the institution's Mexican American students to pursue advanced degrees in mathematics, including the master's degree in mathematics at UTB/TSC, should the institution receive approval to offer such a degree. Additional faculty interested in conducting mathematics research could benefit other science programs at UTB/TSC. Faculty with expertise or interests in mathematical physics, mathematical or computational biology, and mathematics education also could add greatly to this department and the university's growth in scientific research and education.

Department of Chemistry and Environmental Science

The Department of Chemistry and Environmental Science is burdened with a substantial teaching load. The department has attracted some fine young faculty but seems unable to encourage research. The teaching loads and the spartan office and space situation make initiating or sustaining research programs and morale increasingly difficult.

The department has 35-40 chemistry majors, and, in recent years, has been graduating about a dozen students per year. The department's focus should remain on increasing and strengthening its undergraduate offerings.

The department offers a Bachelor of Arts degree in chemistry, and the faculty would like to add a Bachelor of Science degree. With the growing reputation of the mathematics and computer science departments, this addition could be appropriate.

A vacancy in the department has been designated for a faculty member who could work on the "Nano on the Border" initiative. However, the institution has had little success in

attracting such an individual. Since faculty in the nano areas are some of the most highly recruited faculty nationally, this problem is not surprising. If stronger research ties could be developed with the Regional Academic Health Center (RAHC) on campus, a review of the nano focus of that search could be in order.

It should be noted that when we asked faculty about the RAHC research agenda for the purposes of potential collaborations (as we envisioned at UTPA and as reflected in the ties between the UTHC-T and UT-Tyler), they demonstrated little knowledge of potential overlapping research interests. The institutions should take steps to remedy this situation, possibly through a multi-departmental discussion about common research interests with RAHC officials locally and beyond. The UT System's new executive vice chancellor for health affairs should review this situation as well.

Computer Science Department

The Computer Science Department offers courses at the undergraduate level. It has about 200 undergraduates yet only graduates 6-10 per year. There is some discussion about a master's program in computer science, but such a program may be several years away. The department needs to continue to provide much-needed support to students in the other science and computing-intensive disciplines. The department's immediate focus should remain on strengthening and increasing its undergraduate curriculum offerings.

Department of Biological Sciences

The Department of Biological Sciences has historically been strong in areas such as biodiversity, ecology, and marine and subtropical biology. More recently, the department has developed a strong focus on biomedicine as a means of broadening the backgrounds of its graduates for the challenging job market. These areas offer some potential for development. In the broad biological areas related to marine and subtropical biology, the Lower Rio Grande Valley provides a rich laboratory for exploration, and its reliance on fisheries—both recreational and commercial—as well as tourism, underscores the need for continued emphasis on environmental sustainability.

The rapid success of the biology group, led by Professors Luis Colom and Gerson Peltz, is probably attributable to the fact that Colom came to UTB/TSC with an RO1 grant from the National Institutes of Health. This grant was a key factor in expediting his research program. Hence, it appears that successes in funding have been tightly connected to UTB/TSC's ability to hire senior or advanced junior faculty with secured extramural funding. But replicating this success may be more challenging in such areas as biology than in such areas as gravitational wave physics. In biology, for example, young new faculty do not receive sufficient release time, lack adequate start-up funds, and do not have sufficient research laboratory space to carry out extensive research programs. Consideration should be given to adding several new faculty members to decrease the teaching load and augment the growing research strength in biology. Stronger ties with the RAHC could buttress the case for additional faculty.

Collaboration with the Regional Academic Health Center (RAHC)

The academic health units in Brownsville and Edinburg have much in common. Strengths at one institution can complement similar areas at the other institution. We are aware of the history of conflict between the institutions, but we strongly encourage President García and the soon-to-be-named UTPA president to overcome this history for the betterment of the Rio

Grande Valley and its citizens by developing a mutually beneficial institutional research, educational, and political agenda. Accomplishing that would help students at both institutions and the citizens of this region. Given the depth of some historical tensions and the breadth of potential new interests, it will take strong presidential leadership to make such collaborations one of the highest priorities in the days ahead. Only then will faculty involvement and commitment emerge, and only then will it be possible to overcome perceived campus problems, including teaching loads that are perceived to be so heavy that faculty argue they cannot become involved in collaborating.

An example of such potential collaboration is as follows: while the RAHC (UTHSC-Houston) is outside of the College of Science, Mathematics, and Technology, it is inside the biomedicine area, has a public health focus, and can provide important collaborative activities for both faculty and students. For the benefit of both institutions, UTB/TSC's School of Health Sciences and UH's School of Public Health also should develop, expand, and accelerate their ties. Both sides have lacked drive to do so. We urge UT's new executive vice chancellor for health affairs to make it a priority to achieve these closer ties and give the needed support.

The newly created Center for Biomedical Studies will provide further opportunities for collaborations with the Department of Biological Sciences and the School of Health Sciences, including nursing, and the RAHC. In combination, these units can make a major contribution to the health and quality of life in the Lower Rio Grande Valley.

We encourage more dialogue among these players, as well as increased involvement of the various RAHC components located in other communities such as Edinburg. Such departments and centers should capitalize upon promising synergies. They could address, for example, opportunities related to bioterrorism, communicable diseases, and other concerns that emerged from the September 11 tragedies. They also have a chance to provide another major public health contribution by assisting in understanding and reducing diseases prevalent in South Texas. More cooperation would also significantly add to the University's strong relationship with Brownsville and the Cameron County community.

At all academic institutions—and UTB/TSC is no different—other departments (in addition to those noted above) such as psychology, neurosciences, mathematics/statistics, and nursing can play an important role and benefit from a broad discussion about strategic research and potential collaboration across the biomedical areas and with the RAHC.

Other Issues

The search for a new dean of the College of Science, Mathematics, and Technology should result in the selection of a research-oriented faculty member with a strong commitment to integrating research with education. One of the first challenges this individual will face will be the review departmental leadership within the college. Selected rotational assignments could be considered to inject new ideas and styles into a number of key departmental leadership positions.

SCHOOL OF EDUCATION

Dean Sylvia Cavazos Pena of the School of Education informed the WAG team during our visit that a growing number of the school's 41 faculty lines (13 of whom are tenured) are actively engaged in research. Dean Pena noted that she had been involved in negotiating a three-course load for faculty engaged in research, a reduction of two courses in the school's normal teaching load. She told us that the education faculty are particularly proud of the 92 percent pass

rates of its teacher education graduates on the state's ExCET test (to meet state standards, at least 75 percent of a cohort of first-time takers from an institution must pass the first time that they take the test). The WAG team also was impressed that this 92 percent pass rate at an open admissions institution in South Texas compared favorably with the reported 96 percent pass rate at UT-Austin, a highly selective institution that admits some of the best-prepared students in the state and beyond.

Concerns expressed by the faculty included the inability to fill current faculty vacancies, inadequate library resources, the lack of Internet-ready laptop computers for a model classroom the school wants to develop, the need for an instructional technology laboratory, and the lack of funding to support faculty travel. The new Education Business Complex now under construction may address some of the infrastructure needs. But the new dean of education, Dr. Carlos Stockton, who arrived in January 2004, immediately faces a number of related issues.

The clearest and most immediate concern our team identified in this school is the need to fill approximately a dozen existing—but vacant—faculty lines. A number of these lines have become vacant through recent retirements. We were told of the difficulties attracting faculty, which included the improving pay levels provided by the local school systems and the socio-economic environment in Brownsville, which particularly affects candidates' spouses. Yet, the negotiated reductions in teaching loads among this faculty, and the faculty's opportunities and responsibilities to provide teaching personnel for the local community make clear that the school must recruit and select more high-quality faculty. This will have to be one of Dean Stockton's highest priorities. We particularly encourage the University to seek the active involvement of its outstanding community leadership in these recruitment efforts. The encouragement that impressive individuals from outside the university give to new faculty to relocate can be important and effective. With the incredible quality and dedication to UTB/TSC that we saw in the community leadership we met, we have no doubt such an extra effort would pay great dividends.

Closed Loop Phenomena

We shared discussions about the potential impact the School of Education has had and could continue to have on the local community and, by extension, the local economy. More than 90 percent of UTB/TSC's incoming students come from Cameron County, and UTB/TSC provides more than 85 percent of the teachers for the two counties' schools around the Brownsville area. High-quality teacher education graduates will eventually lead to better students at the university and better-prepared college graduates seeking employment in the Brownsville area.

One by-product of the University's relationship with the local school system is that many UTB/TSC graduate students in education come from the local school system. It is the largest graduate program at UTB/TSC. This type of graduate student, who often works as a full-time teacher, generally will elect the non-thesis option at the master's level. While understandable, such a situation does not support strong research activity among the education faculty, nor is it likely that students who graduate with a non-thesis master's degrees will consider pursuing the Ph.D. degree. This concern affects our view of the Ph.D. proposal discussed below.

Ph.D. Proposal

We were told about preliminary discussions of a possible collaborative doctoral program in curriculum and instruction with the University of Houston. An existing master's program

brings in about 20 new students each year and has recently been graduating about six to eight per year. We are aware that, because of this growth at the master’s level, discussion has grown about a doctoral program with either an Ed.D. or a Ph.D. that UTB/TSC might offer. WAG encourages a review of this situation upon the arrival of the new dean. Strengthening the bachelor’s and master’s programs and expanding efforts in the community might provide more long-term benefits to the institution than creating such a doctoral program at this time. Indeed, expanded ties with the science departments could result in stronger math/science education activities and benefits to the university and community. The university could expand such ties with several new faculty in the science areas and in the School of Education.

INTERNATIONAL TECHNOLOGY EDUCATION, AND COMMERCE CAMPUS (ITECC)

Major renovations and program expansion are underway at the Amigoland Mall, a facility the university acquired in 2002 and converted into the International Technology Education and Commerce Campus (ITECC). Staff enthusiasm and morale are high, both because of the renovation successes and also because of program successes. For example, the Workforce Training and Continuing Education (WTCE) program is a key element of this campus’s efforts with the community. During the five-year period from FY99-FY03, significant positive changes have occurred in key indicators of progress in the Workforce Training and Continuing Education (WTCE) Program. As the data in the table below indicate, WTCE enrollment has increased dramatically, almost tripling the FY99 enrollment. Moreover, there have been significant increases in annual revenues and income from grants and contracts, while the annual education and general budget has decreased 55 percent during this time.

Table 2. UTB/TSC WTCE Program Statistics for Selected Years¹²

Area	FY 1999	FY 2002	FY 2003
Annual Enrollees	5,900	16,500	16,560
Annual Revenue	\$2,526,787	\$7,536,589	\$6,590,00 (thru 8/03)
Annual E&G Budget	\$781,287	\$384,252	\$354,190
Grants and Contracts	\$1,465,336	\$7,505,320	\$6,539,800

During FY04, three start-up auxiliary-training businesses (Child Development Center, Computer Services, and Trade Show Venue and Exhibition Hall) will become operational at the ITECC; Pell financial aid for WCTE students is anticipated to become available; and seven businesses will begin operating in the ITECC’s Small Business Incubator Program. The physical presence of the Mexican Consulate at the ITECC should ensure a steady stream of students and facilitate expanding the programs.

Visiting the site, one could only be impressed with the new incubation facilities, the worker-training activities that are closely tied to community work-force needs, and the inclusion of the Mexican Consulate in this new facility. Such a collection of capacities and functions will allow UTB/TSC to create an outstanding economic development service for Brownsville/Cameron County. It also will position the University—through potential

¹² Source: *Key Indicators of Progress of Workforce Training and Continuing Education (WTCE) Program: FY1999-2003*, University of Texas-Brownsville/Texas Southmost College, 2003. Information provided in a briefing to WAG on December 2, 2003 by Tony Zavaleta, vice president for external affairs.

partnerships and cross-border collaborations with other U.S. universities, governments, and the private sector—to become a leading factor in creating new jobs and expertise throughout South Texas.

The successful development of ITECC, however, depends on faculty becoming more involved. The vice president for external affairs (Antonio Zavaleta) and the WCTE dean (James Holt) also recognize that ITECC's long-term success depends heavily upon the business community, and they envision having an external advisory board of business owners in place during FY04. While the involvement of the business community in planning and developing the ITECC is essential, so too is that of the UTB/TSC faculty, particularly faculty in the School of Business. The university should consider establishing an internal steering/advisory committee that includes UTB/TSC faculty to help guide the development of the ITECC's academic programs.

Without such faculty involvement (to date, this appears to have been minimal), the ITECC is destined to become a separate training center with no significant academic ties to the main campus. Such an outcome will be accelerated by the planned move of the automotive and refrigeration programs from the main campus to the ITECC; by the failure to develop articulation and maximize credit transferability between the ITECC's certificate programs and the associate and bachelor's degree programs on the main campus (the bachelor of applied technology program notwithstanding); and by the absence of academic course offerings at the ITECC. Instead, we envision new or strengthened linkages in areas such as criminal justice, communications, early childhood education, engineering technology, and business, among others.

The creation of a seamless pathway between certificate programs and associate degree programs—as well as from associate degree programs to bachelor's degree programs—requires faculty leadership and buy-in. Encouragement from UTB/TSC faculty and the presence of upper-level students are essential to creating a climate that inspires certificate and associate degree students to pursue and complete bachelor's degree programs. It is essential that these activities be appropriately coupled with the academic activities of the university and be nurtured with an organizational structure appropriate to encouraging these linkages to grow and expand.

SCHOOL OF BUSINESS

The School of Business has 35 faculty, including adjunct faculty and a visiting lecturer. Its business technology program has about 400 majors. Few faculty in the school are involved in research; most appear to focus on their teaching responsibilities. The primary concern of the faculty with whom we met was acquiring Association to Advance Collegiate Schools of Business (AACSB) accreditation. Other concerns centered on visa problems, heavy teaching loads, and inadequate travel funds which are limited to approximately \$250 per faculty member per year.

We asked about the ITECC and found that faculty in business believe it provides needed classroom space for the school. Yet they did not express a need to become more involved in the academic programs offered on the ITECC. Furthermore, the faculty did not view ITECC students (or associate degree students for that matter) as potential baccalaureate business degree students. Increased faculty involvement in the programs at ITECC might change this perception.

Based on these discussions, we are concerned that associate degree students in business lose 12 of the 36 hours they have earned when they transfer to the school's four-year degree

program.¹³ The school's faculty should review and determine the most effective means to address this deterrent to student advancement.

As with a number of other academic programs, the school may have opportunities to collaborate with UTPA's strong program in international business. Both institutions could well bring strong ties with Mexican universities and businesses to bear and provide a strong South Texas international business program which would benefit the institutions, the state of Texas, and the business community.

COLLEGE OF LIBERAL ARTS

A major issue facing the college is getting additional new faculty. Attracting faculty to the institution has been particularly difficult. The faculty would like to add master's programs in public policy and management, behavioral sciences, and juvenile justice, among other areas. However, the college has been unable to fill existing vacancies in public policy and in criminal justice. Faculty recruitment problems and the faculty's lack of significant involvement in research work against the addition of master's degree programs. Involving the community leadership more in recruitment could be productive. We are also aware of the successes American universities have had recruiting Canadian faculty who face mandatory retirement in Canada.

There seems to be a heavy reliance on a large number of part-time faculty in the Criminal Justice Department, which has 800 majors. The four full-time faculty members in the department teach five classes (three preparations) with 30 students on average in each class. On a more positive note, we learned that the transfer from the associate's degree program to the bachelor's degree program in criminal justice was fairly smooth since the associate's degree program only has two technical courses; the rest are transferable.

DEPARTMENT OF ENGINEERING TECHNOLOGY IN THE COLLEGE OF SCIENCE, MATHEMATICS, AND TECHNOLOGY

The baccalaureate degree program started in 1997 as a spin-off from the program offered by UTPA. The program enrolls almost 90 undergraduate students and awards half a dozen or so degrees per year. The faculty are not pleased that UTB/TSC is not authorized to duplicate or extend the engineering major to the UTB/TSC campus. They shared with us their concern about the debate among the UTB faculty over the degree program's legitimacy and scope. Further, faculty feel employers in the region consider the engineering technology baccalaureate degree inferior to an engineering degree, thereby limiting the employability of their graduates. Faculty, however, do not have any issue with the name of the associate degree program in engineering technology.

Other Issues to Be Addressed

OUTREACH

The Office of the Vice President for Student Affairs has been particularly effective in securing external support for a range of educational outreach activities that offer academic and personal development support for students at the middle and high school levels. If aligned properly, these programs, which include a GEARUP grant and several TRIO¹⁴ program awards, along with a number of science-oriented programs, could become a major recruitment mechanism

¹³ Students are able to pursue either the Bachelor of Applied Arts and Sciences or the Bachelor of Applied Technology.

for the institution; lead to better-prepared entering students; and develop more students interested in pursuing careers in science fields in which Mexican Americans are significantly underrepresented.

MEXICAN AMERICAN FACULTY

While UTB/TSC reportedly has a significant number of Hispanic faculty, it does not have a large number of Mexican American faculty. Given the small number of such faculty nationwide, this situation is somewhat understandable. However, the University must take some responsibility for its failure to encourage and mentor a continuous flow of its Mexican American students into doctoral degree programs. We were repeatedly told that UTB/TSC students do not want to leave the Valley because of family ties/responsibilities. Still, there must be a number of talented students among the institution's 10,000-student body who could be supported financially with stipends through a doctoral program. Such support could come with the understanding that they might initially join the UTB/TSC faculty following completion of their degree program.

Such Mexican American faculty members are needed as role models and mentors. The pathways they follow can serve as guideposts for undergraduates. This leadership in turn would help address the institution's poor six-year graduation rate (discussed below) of first-time, full-time bachelor's degree students. We therefore strongly recommend that the UT System address the problem of UTB/TSC students with talent and interest in the sciences not pursuing Ph.D.s in those fields. Doing so is in the state of Texas' and UTB/TSC's short- and long-term interests. This challenge is also a national issue that, if addressed, would bring substantial credit and recognition to the institution.

SIX-YEAR GRADUATION RATE

Information provided by the institution shows that the six-year graduation rate for first-time, full-time bachelor's degree students is a mere eight percent. By contrast, the rate at UTPA exceeds 20 percent—and UTPA has a comparable student body (open admission, predominantly Hispanic, predominantly female, primarily commuting, and with significant family obligations as well as developmental education needs). This poor record demands strong measures to improve student retention and persistence through graduation. The institution needs to focus substantial attention on significantly improving this track record. It is unfair to students and their families to continue to add programs when the probability of students completing these programs is so low.

The following table provides comparative data, including six-year graduation rates, across the four institutions that this WAG team visited.

¹⁴ TRIO refers to a series of programs funded under Title IV of the Higher Education Act of 1965 to help low-income Americans enter college, graduate and move on to participate more fully in America's economic and social life.

Table 3. Selected Statistics, UT-Tyler, UTPA, UTB/TSC, and UTPB¹⁵

	UT-Tyler	UT-Pan American	UT-Brownsville /TSC	UT-Permian Basin
Median Income per Household, 1999	\$37,148	\$24,863	\$26,155	\$31,152
Student Headcount, Spring 2003	4,261	14,174	10,005	2,663
# of Degree Programs offered (9/23/03) (A=Assoc. B= Bach. M=Master's D=Doct.)	77 (41B, 36M)	96 (1A, 51B, 42M, 2D)	66 (16A, 34B, 16M)	47 (29B, 18M)
#(%) of Minority Students (2002)	727 (17%)	12,914 (90%)	9,370 (94%)	1,021 (38%)
% Students needing Developmental Education, 2000-01	1.6%	70%	52%	8.2%
# degrees conferred FY 2002 (C= Certificate)	805 (684B, 121M)	2,037 (1,597B, 430M)	1,387 (178C, 443A, 618B, 148M)	485 (417B, 68M)
Six-year graduation Rate (first-time, full-time bachelor's)	n/a	22.9%	8.0%	24.0%
Faculty 2001 (Full-time, Part-time)	(279, 95)	(571, 108)	(303, 242)	(139, 40)
Full-time faculty: student ratio spring 2003	1:14	1:21	1:29	1:15
State Appropriations per student, fall 2002	\$4,954	\$4,006	\$3,122	\$6,092

Note: The two smaller institutions in this report (UT-Tyler and UT-Permian Basin) have state appropriations per FTE substantially higher than do UT-Brownsville/TSC and UT-Pan American. The UT System may wish to review and access this funding pattern.

FACULTY HIRING

As part of this strategic hiring activity, hiring within academic departments must be both encouraged and monitored to ensure that faculty about to receive offers of employment have the appropriate qualifications. The University, through the provost and working closely with the faculty and deans, should jointly determine the skills generally needed in all of the academic areas. Any hiring, regardless of how badly needed, should be done on the basis of teaching need and research opportunities and follow a strategic vision that focuses on needs and facilities, growth and directions, and new opportunities. Such a strategy could become part of a university master plan. The strategic plan would also benefit from the assistance of or review by outside experts. Filling numerous positions without such a master plan could well lead to inappropriate hires and backward rather than forward motion.

¹⁵ Source: UTB/TSC - Peer Data for Accountability. Materials provided by UTB/TSC for site visit.

We must stress that the following points also apply to the other three emerging institutions we reviewed, as we will mention in far briefer format in the appropriate sections:

- Faculty hiring decisions should be examined periodically after faculty are in place to determine if the hiring has been effective or if adjustments should be made. Such outside review could be established for a finite time and extended, subject to review by the System and the institutions.
- Because of the key roles deans play in such decisions, and because of the desire to constantly improve the quality of faculty hires, the UT System and the university may wish to require that all hiring of deans include national searches as well as pre-decisional qualifications reviews of finalists. Such steps would greatly improve the likelihood of strong hires.
- During our visit, we heard several references to the difficulty of attracting faculty to Brownsville. Establishing teaching residencies in certain disciplines might temporarily lessen the teaching burden on faculty until more lasting solutions can be put into place.
- The University should pursue novel approaches to recruitment, including approaching faculty near retirement at Canadian universities, many of whom face mandatory retirement, in order to lure them to the warmer climate of South Texas.

CAMPUS SPACE AND BUILDINGS

UTB/TSC's physical plant has greatly expanded with the acquisition of the 600,000 square-foot Amigoland Mall, which has become the ITECC discussed above. In addition, a former Holiday Inn has been acquired and renovated for student housing; a second, similar purchase may also be possible. The institution's School of Health Sciences is expected to benefit significantly from UTHSC-Houston's RAHC, which opened in January 2002. The RAHC is built on land donated by TSC.

As noted earlier, TSC owns all but two buildings on the campus. The financing for either constructing or renovating these buildings has come largely through bonds floated by the community college or the State of Texas. The local government's share of buildings and land since the inception of the partnership has produced or will produce an additional 335 acres for UTB/TSC, along with more than \$55 million. The State of Texas has provided or is expected to provide approximately \$62 million in new construction funding.

Recent construction activities include the Life and Health Sciences Building (2001), the Student Union (2002), RAHC with funding from UTHSC-Houston (2002), classrooms at the ITECC (2002), additional campus parking (2003), and The Village, which is campus housing (2003). Future construction projects include the Cueto Building (2004) and the Education and Business Complex (2005).

Even with its proposed space, the UTB/TSC will face challenges arising from class size and the limited availability of research space. Further, fiscal constraints will limit the institution's ability to address these concerns. As part of its strategic planning, we encourage the University's leadership to carefully review the issue of class size. It is not uncommon for a community college to struggle to maintain smaller class sizes as its student population surges, and it transitions to becoming a university. The need for research space also will present difficulties

during this transition. In addition, faculty must have adequate office space, and the University leadership should give prompt attention to remedying problems in this area.¹⁶

ARTICULATION ISSUES

The poor articulation between lower and upper division courses at UTB-TSC likely drags down the poor six-year graduation rate discussed earlier. As the enrollment crush arrives, and the county's population increases, the University will only have to expand courses at the lower and upper levels. Yet, the merging of UTB and TSC may offer opportunities to meet the growing demand. As we have seen, this UTB/TSC partnership is a novel concept. It could significantly boost the pool of Hispanic and other students in higher education. But it must make it possible for community college students to transfer to upper-level programs with minimal loss of course credit, regardless of the associate degree acquired. We therefore recommend that the University immediately review current UTB/TSC policies affecting course transferability and correct any problems expeditiously. In the review, the university should consider whether

- Issuing certificates encourages or slows students' pace of graduation.
- Certain incentives will induce students to accelerate their academic progress.
- Consider the establishment of a position of student ombudsman or dean of the undergraduate college to work with students on the issues that affect student welfare. This position could help address matriculation concerns and even the low baccalaureate graduation rates.

For guidance in this process, the University should look at other community college/university transfer models, such as the ones in place at the Maricopa Community Colleges/Arizona State University and the transfer agreement between the Arizona community colleges and universities. A third model worthy of review is the Western Community College and Northern Arizona University (NAU) model, in which NAU shares facilities with the community college and provides a seamless transition to four-year programs.

Another strategy that has had some success is the Achieving a College Education (ACE) program in place at several community colleges that have strong articulation agreements with nearby universities. The Maricopa Community College has one such program that enables high-risk students to move from the last two years of high school to the community college and on to the university while earning college credit at the same time. This arrangement has successfully encouraged students to earn their high school diplomas while taking college classes during the summer. Such a program might fit well into the UTB/TSC partnership.

OPEN ADMISSIONS OR QUALITY CONSIDERATIONS

The challenges that the growth of the Hispanic population will bring Texas have been mentioned previously and are widely known. But this growing population also faces a serious challenge because it has limited access to flagship universities. The problems it faces may be exacerbated if institutions that serve a large number of minorities do not provide a high-quality education. The UT institutions in these rapidly growing regions of the state should either become the primary institutions for higher education serving these students and receive appropriate state support for their faculty and facilities, or seriously consider limiting their enrollments to avoid

¹⁶ Information on physical plant provided in briefing to WAG team by vice president for administration and partnership affairs and others on UTB/TSC facilities plans, December 2, 2003.

over-stretching their thin resources. The former is by far the preferable option, since the latter approach would likely leave even more Texas citizens without the benefits of such education and produce tremendous negative social and economic consequences. Still, innovative means to generate funding will not be painless, particularly with constrained state spending. At a minimum, however, the university could justifiably consider new capital funding mechanisms.

The UT System also might consider developing and helping to identify special funding opportunities for regional capacity-building collaborative sites in such rapidly expanding regions as South Texas. Selected universities with these sites could then provide continuous capacity-building support for K-12 teachers, particularly in teacher training and curricular development; technological support and program development for sharing courses; and instructional materials and expertise to expand course offerings. They could also facilitate collaborative research activities that capitalize on mutual strengths and expand undergraduate research opportunities.

Since the universities of South Texas and elsewhere can serve as a pipeline for Hispanic students to complete their undergraduate education at institutions near their homes, they could also develop ties with other institutions to further educate these students in an array of disciplines, especially in mathematics, the sciences, and engineering. Such an effort would greatly benefit the region. In addition, the WAG team is aware that the Texas grant available to selected students at the university level has been under-subscribed in recent years. A strong effort to encourage more students to apply for this grant would allow additional resources to flow into the university without hurting its neediest students.

OTHER POTENTIAL OPPORTUNITIES

We have mentioned the urgent need for the University to increase and enhance its collaborations with academic health centers in this region. But the University also has significant opportunities to tie these centers with campus-based faculty to develop important programs in research, training, homeland security, and public health for this region. It also has a valuable opportunity to build on the foundation of excellence in gravitational wave physics and biology. Other opportunities for research and education include the following:

- Taking advantage of its proximity to the U.S.-Mexican border, particularly since substantial industrial activities exist on both sides of that border.
- Developing innovative ways of responding to the increasing pressures to produce certified teachers to handle the surging South Texas student population.
- Increasing the quality of teaching and materials in such areas as K-12 education to decrease the number of college students needing remedial courses.
- Employing distance-learning technologies at the younger grade levels as well as for worker-training, undergraduates, and others.
- Pursuing both research and career opportunities in biotechnology, biomedicine, nursing, medical technologies, and other public health areas.
- Working—through faculty in business, engineering, and other areas—with manufacturing industries on both sides of the border in technology development, worker training, and research collaborations.
- Addressing environmental concerns about water, food, tourism, and pollution that require expertise and research.

Can UTB/TSC Become a Research University by 2010?

A university's ability to attract \$100 million per year in extramural funding has become the selected indicator of whether an institution is a Tier 1 research university. It seems impossible that within ten years UTB/TSC could reach this mark. However, UTB/TSC may be able to approach extramural federal research funding of \$10-12 million per year in ten years. This achievement would amount to a three- to four-fold increase over the ten years. Given the budget and population challenges that UTB/TSC faces, reaching this new level of average per-year funding would be a remarkable accomplishment.

Judgments about attaining this goal require a realistic consideration of the UTB/TSC faculty culture. The faculty at UTB/TSC is composed of two groups: (1) the more senior, often tenured faculty, hired before the partnership and under a totally different mission; and (2) a more junior faculty group hired after the partnership and recruited to teach at UTB as well as to engage in some research and creative activities as part of their responsibilities.

The faculty situation at UTB/TSC differs from many other UT campuses we visited. At UTB/TSC, a community college faculty and a university faculty are merging. In the liberal arts and sciences, efforts have been made to phase out community college faculty who could not make the transition into research. In our judgment, UTB/TSC should make faculty transition and subsequent hiring decisions as part of a larger long-term strategy that takes into account the resources, facilities, and type and number of faculty needed to achieve institutional goals as well as to serve the projected quality and size of the student body. The University has begun this type of strategic process with the creation of The Commission on the Future. We commend this effort but encourage continued and renewed strategic planning in light of our report and as discussed above.

How Might UTB/TSC Look in Five Years?

If we were to look ahead to 2010, we might see that the board of UTB/TSC, with support from the UT Board of Regents and the System office, had determined that UTB/TSC had not limited enrollments and continued to offer strong educational opportunities for increasing numbers of South Texas students. In this scenario, though the student population in 2010 would have surpassed the 20,000-student level, activities such as GEARUP, TRIO, and other K-12 outreach programs in and around Cameron County would have reduced the percentage of incoming students requiring remedial courses to an astounding 11 percent in 2010, compared to 52 percent in 2001 and 96 percent in 1995. Considerable credit would go to the UTB/TSC School of Education, which would have increased its collaborative programs in those schools. The School of Education would have increased its ExCET pass rate for graduating teachers from 92 percent in 2002 to a UT System-high of 99 percent.

As we continue this look into the future, we find incoming UTB/TSC students disproportionately deciding to pursue academic programs in mathematics, science, and engineering. The UTB/TSC science and engineering faculty's productive outreach to the local schools has worked, raising interest in these fields and improving the ability of incoming freshmen to succeed in their initial science and engineering courses. As a result, strong master's degree programs have emerged in mathematics, biology, physics, computer science, and several areas of engineering. Good partnerships link UTB/TSC and the Regional Academic Health Center; they include faculty in such disparate areas as structural and computational biology, computer science, physics, bio- and mechanical engineering (formerly engineering technology), nursing, social work, psychology, and a new program in public health. The master's programs in

a number of areas, including the sciences as well as the Ph.D. program in physics, serve excellent graduate students actively sought throughout Texas and beyond. The physics program has continued to gain in national and international stature. For the second consecutive year, the UTB/TSC graduate program has been ranked in the top five nationally in producing Hispanic master's degree graduates in science and engineering areas.

By 2010, we see the number of degree offerings up 140 percent since 2000, a result of the commitment of the UT System and its Regents to provide several of the smaller universities in the system with capital-construction assistance funds to handle the surging pool of college-age students. The expanded degree offerings have stimulated more students to declare majors at earlier stages, according to a report by the recently created position of dean of the undergraduate college. The quality of entering students also is improving, due in part to stronger admission requirements instituted by UTB/TSC and several of the other rapidly growing universities in South Texas. Yet acceptance rates are still high because improved elementary, middle, and high school preparation—provided by teachers who in many cases are UTB/TSC graduates—has improved the quality of entering students.

Continuing our look ahead, we find a dramatic increase in students living on-campus. Thanks to the university's acquisition and construction/remodeling of several facilities on the adjacent peninsular properties, new resident facilities for undergraduates (and a small graduate student living center) have pushed this on-campus population upwards of 2500 students. Plans are underway for further renovation of properties recently acquired in the downtown Brownsville area for both academic and residential purposes.

In addition, the ITECC has become a showcase on how to link university interests with community economic development and job creation; it has become a magnet for industry and private sector representatives interested in doing business in Mexico via the Southwestern U.S. The size of the Mexican Consul's staff has mushroomed to handle the increased activity. Along with UTPA, UTB/TSC has become a major academic focal point on the border for Mexican students seeking a U.S. higher education. Small businesses along the U.S. border are spinning out of the incubator located in ITECC, which is providing substantial economic growth for the region, partly through ITECC's active and growing partnership with the Brownsville Economic Development Council—which is housed in the ITECC. New training initiatives include major statewide criminal justice training for new officers and the retraining of officers around the state via distance-learning technologies. The local community, in one of several recent displays of support, has passed its third bond issue for construction at UTB/TSC. The buildings resulting from or under construction due to earlier bond issues are beginning to relieve the need for larger classrooms and for additional research space in the sciences and in other disciplines. The research activities are expanding thanks to the additional faculty hires which have tracked the priorities of the recently updated University Strategic Plan. These faculty members have been hired to teach the numerous new courses and majors that serve the rising number of UTB/TSC students. More UTB/TSC graduates also take advantage of graduate education offered by universities that increasingly come to Brownsville to recruit quality undergraduates. Many of these students remain committed to returning to South Texas when they conclude their graduate degrees. UTB/TSC, the South Texas region, and Texas have benefited greatly from their return.

APPENDIX 1

SCOPE OF WORK

The Consultant shall perform the following Work in connection with the development of a detailed plan (the “Plan”) to significantly expand the research capabilities of the following eight (8) academic institutions (the “Institutions”) of the University:

Group A

The University of Texas at Arlington
The University of Texas at Dallas
The University of Texas at El Paso
The University of Texas at San Antonio

Group B

The University of Texas at Brownsville
The University of Texas – Pan American
The University of Texas of the Permian Basin
The University of Texas at Tyler

In accordance with Section 4.d. of this Agreement, Consultant shall assemble two teams of individuals to perform the Work:

- One team, composed of seven or eight members, shall conduct and supervise the Work at the Group A Institutions.
- A second team, composed of six members, shall conduct and supervise the Work at the Group B Institutions.
- Team members shall include nationally recognized leaders with demonstrated competence, knowledge and experience in developing research capabilities for scientific, technological or higher education enterprises.

Consultant, through its teams, shall:

- Review background information provided by the Institutions as well as information developed independently, and shall request additional information from Institutions as the Work progresses.
- Visit Institutions during September 2003, October 2003, November 2003, December 2003 and January 2004. Analyze and evaluate the information gathered and formulate strategies to significantly expand the Institutions’ research capabilities.
- During January 2004 and February 2004, both teams shall identify their major findings and conclusions, answer questions in this Exhibit, and provide recommended strategies and tactics for using current resources to greater effect and for future development of the Institution, and for significantly expanding the Institutions’ research capabilities, in light of constraints and opportunities described in this Exhibit.

Consultant shall include the following work product in the Plan:

- 1) A set of strategies and tactics for using current resources to greater effect and for future development of each Institution.
- 2) Highly focused solutions to significantly expand the research capabilities of each Institution that are aligned with national and state research priorities.

Consultant shall address the following questions concerning each Institution in the Plan:

- 1) What are the current research strengths of the Institution?
- 2) What are the possibilities for further expansion of the research profile at the Institution, using its existing strengths?

- 3) What are the next high-opportunity research areas that the Institution could develop? Explicit recommendations concerning numbers of faculty, target departments, and specific disciplines or sub-disciplines shall be addressed.
- 4) What are the additional resources that the Institution needs to pursue its high-opportunity research possibilities? Specifics of support personnel, graduate students, space, and equipment shall be provided.
- 5) In what order should actions be taken to develop research at the Institution? What is the set of priorities, and why are these the priorities? What is a likely time frame for the research enhancement?
- 6) Are there partners (local, state, or national) who could help the Institution increase its research profile?

Consultant shall address the following questions for the group of Institutions as a whole in the Plan:

- 1) To what extent do the strengths of the Institutions overlap?
- 2) Are there obvious opportunities for collaboration among the Institutions that should be pursued?
- 3) Are there shared resources that should be developed for the Institutions?
- 4) What are the high potential possibilities for collaboration with a nearby medical or health science campus?

Consultant shall address the following constraints in the Plan:

- 1) Each Institution's enrollment is expected to grow. Largest growth is anticipated at U.T. Arlington and U.T. San Antonio. With the exception of U.T. Dallas, the Institutions do not currently pursue selective admissions policies. The pressure of enrollment, however, may lead to greater selectivity at all campuses over the next five years.
- 2) The principal basis for state appropriations is formula funding, based on semester credit hours of instruction, with a two-year lag. The formula provides additional funding for graduate and upper-division courses, and the formula also funds engineering and science courses at a higher rate. Because of the lag in formula funding, increased growth will not pay for itself in the short term.
- 3) The State faces a current revenue shortfall of approximately \$9 billion. Part of this shortfall will be met with a budget cut in appropriated funds. Even when the economy improves, it is not realistic to expect substantial increases in state appropriations.
- 4) Although six of the Institutions are entitled to share in the proceeds of the Permanent University Fund ("PUF") endowment, recent losses in the stock market make additional distributions from the PUF unlikely in the short term.
- 5) Current State law does not permit the University to waive tuition for graduate students. Research and teaching assistants who are appointed at least half time have been eligible to pay resident (in-state) tuition, and, were eligible for staff benefits, including health benefits. Recent legislative changes impact this eligibility. Funds available for graduate fellowships are quite modest.

Consultant shall address the following opportunities in the Plan:

- 1) The local communities are very supportive of the Institutions.
- 2) There may be philanthropic support from foundation or individuals for research expansion.

- 3) The Texas Legislature recently deregulated tuition. Authority for setting tuition, for the first time, will be delegated to the Board of Regents, allowing for a more differentiated tuition structure.
- 4) The state legislature recently approved legislation that will allow the Institutions to retain all of their indirect costs reimbursements. Formerly, these Institutions were permitted to retain only 50% of their indirect costs.
- 5) There is a possibility of some special item funding from the Governor's Office.

In addition to the forgoing questions, constraints and opportunities, the Consultant shall identify and respond to any additional issues relevant to the specific challenges of each Institution.

Further, the following questions were posed for each of the developing institutions:

The University of Texas at Brownsville/Texas Southmost College:

- What are the next steps UTB/TSC should take to improve its educational effectiveness with its current student body?
- What are the most promising academic areas for research expansion or for research collaboration with other institutions?
- What are the next academic degree programs that should be developed for UTB/TSC?
- How can UTB/TSC best align itself with opportunities for economic development in South Texas?

The University of Texas – Pan American:

- What academic areas are appropriate for the next doctoral-level program?
- UTPA has identified four areas of regional significance for academic focus. These areas are bilingualism; biomedical sciences and engineering; border life and international relations; and subtropical environment and ecology. Are these appropriate areas? Are other areas equally suitable or more promising?
- What academic or professional areas best align with further economic development in the South Texas area?
- What steps should UTPA take next to improve its effectiveness in educating its distinctive student body?

The University of Texas of the Permian Basin:

- What are the next steps UTPB should take to improve its educational effectiveness with its current student body?
- What are the most promising academic areas for research collaboration with other institutions, such as Odessa College or the other institutions within the UT System?
- What are the next academic degree programs that should be developed for UTPB?
- How can UTPB best align itself with opportunities for economic development in West Texas?

The University of Texas at Tyler:

- What are the next steps UT-Tyler should take to improve its educational effectiveness with its current student body?
- What are the most promising academic areas for collaboration with the University of Texas Health Center-Tyler?
- What are the next graduate and professional degree programs that should be developed for UT-Tyler?
- How can UT-Tyler best align itself with opportunities for economic development in East Texas?

APPENDIX 2

THE WASHINGTON ADVISORY GROUP TEAM

Dr. Raymond Bye has spent his career at the NSF and Florida State University (FSU) in areas related to scientific and engineering research, research administration, U.S. science policy, and legislative and public affairs. Beginning in 1972, he served over two decades at the NSF, with more than a dozen years as director of the Office of Legislative and Public Affairs. Following his service at NSF, he was named associate vice president for research at FSU in 1994. In 1999, he was named interim vice president for research and, after a national search, was named FSU's vice president for research in 2000. In that position, his responsibilities included sponsored research administration, technology transfer activities, the FSU Research Foundation, oversight of research regulatory issues, research communications programs, and several interdisciplinary research programs (such as the National High Magnetic Field Laboratory, the FSU Center for Advanced Power Systems, the Institute for Science and Public Affairs, and the FSU Marine Laboratory). In June 2003, FSU's new president asked that he assume expanded federal relations responsibilities along with leading the university's activities related to economic development. In this capacity, he serves as the lead university official in all federal and Congressional relations activities. Dr. Bye has served on a number of boards and commissions, including as president of the FSU Research Foundation; a member of the Oak Ridge National Laboratory Board of Governors and the Board of Oak Ridge Associated Universities; Chair of the National Association of State University and Land-Grant Colleges' (NASULGC) Council on Governmental Affairs; and as a member of the Board of Directors for the NASULGC. Dr. Bye has received a number of awards, including the NSF Distinguished Service Award and the President's Meritorious Executive Award.

Dr. Raúl Cárdenas served as vice chancellor for student development and community affairs for the Maricopa Community College District in Phoenix, Arizona prior to his recent retirement. He is the immediate interim chancellor of the district, the past president of Paradise Valley Community College and the founding president of South Mountain Community College, both in the Maricopa system. His active retirement assignment with the Maricopa Community College District will have him working at the Mesa and Scottsdale Community Colleges. His professional career spans three decades and all levels of education—as an elementary, junior high and high school teacher, a high school vice principal and community college dean of students in El Paso, and as an assistant vice chancellor for student affairs at the University of California at Berkeley. Dr. Cárdenas' participation in national organizations is quite extensive and includes having served as member of the Board of Directors for the American Association of Community Colleges and the American Council on Education; member of the President's Academy Executive Committee of the American Association of Community Colleges; chair of the Executive Committee of the Hispanic Association of Colleges and Universities; and member of the American Council on Education Commission on International Education. He is currently a member of the Coordinating Council for the Hispanic Border Leadership Institute, Executive Committee of the International Consortium for Education and Economic Development, Fundación Solidaridad Mexicano Americana, and other higher education organizations. Dr. Cardenas received his M.Ed. from the University of Texas-El Paso, and a Ph.D. in educational administration/student personnel from the University of Arizona.

Dr. Carlos Castillo-Chavez, a native of Mexico who immigrated to the U.S. 28 years ago, holds joint appointments in the Departments of Statistics, Biological Statistics and Computational Biology and Theoretical and Applied Mechanics at Cornell University, where he is also a member of the graduate fields of applied mathematics, biometry, epidemiology, ecology and

evolutionary biology, statistics and theoretical and applied mechanics. In 1996 he established the Mathematical and Theoretical Biology Institute (MTBI), which fosters research activities primarily among underrepresented minority undergraduate students who are enrolled at non-selective U.S. universities, but also mentors and supports underrepresented minority undergraduate and graduate students from various universities who are working in the mathematical or statistical sciences. He received a Presidential Award for Excellence in Science, Mathematics and Engineering Mentoring in 1997, in part, for the work that he carried out at MTBI. In 1997 he founded the Cornell-Sloan fellowship program in the mathematical and statistical sciences at Cornell University, a program that he has directed ever since. Dr. Castillo-Chavez has received various awards including two White House Awards (1992 and 1997), a QEM Giant in Science Mentoring Award (2000), and SACNAS distinguished senior scientist award (2001). In addition, he was named Profesor Plenario by the Universidad de Belgrano (Argentina, 1996); and held a Catedra Patrimonial by the Institute of Applied Mathematics (IIMAS) at National University in Mexico (UNAM, 1998). He was selected as the 2003 Ulam Scholar by the Center for Nonlinear Dynamics (CNLS) at Los Alamos National Laboratory. He has published over one hundred research articles, edited four volumes, and co-authored a textbook on mathematical biology with Fred Brauer (2001).

Dr. Thomas Winston Cole, Jr. served as the first president of Clark Atlanta University from 1989 until his retirement in 2002, after serving simultaneously as president of both Clark College and Atlanta University prior to their historic consolidation. Previously, he was chancellor of the West Virginia Board of Regents, the second and one of only four African Americans to head a state system of public higher education, and had served as president of West Virginia State College. Prior to these appointments, he taught at Atlanta University where he was chairman of the Department of Chemistry, Fuller E. Callaway Professor of Chemistry, and provost and vice president for academic affairs. He also served as director of the Atlanta Resource Center for Science and Engineering, the first of three centers established in the United States by the National Science Foundation. Nationally recognized for his scholarly contributions to science and his leadership in higher education administration, Dr. Cole has served as chairman of the Council of Presidents of the Member institutions of the College Fund/UNCF; chairman of the Council of Presidents for the College Fund, the Atlanta University Center; and the Black College Fund of the United Methodist Church. He currently serves as the chair of the Board of Directors of the Quality Education for Minorities (QEM) Network, and holds memberships on the Executive Committee for Project Kaleidoscope, and the General Board of Higher Education and Ministry of the United Methodist Church. He is a past member of the Executive Council, Commission on Colleges, Southern Association of Colleges and Schools. A Texas native and graduate of Wiley College, Dr. Cole has been awarded numerous honors in recognitions of his scientific, educational and community contributions.

Dr. Shirley McBay assumed the position of president of the Quality Education for Minorities (QEM) Network in July 1990, following ten years as dean for student affairs at the Massachusetts Institute of Technology (MIT) and three years as director of the QEM Project, an MIT-based initiative supported by the Carnegie Corporation of New York. Previously, she served as a program manager/director in the Science Education Directorate of the NSF, where she directed two national programs designed to increase minority participation in science and engineering. Prior to joining NSF, she spent 15 years at Spelman College, including as professor of mathematics, department head, division chair, and associate academic dean. At QEM, Dr. McBay has served as the director of several science and engineering-focused projects. These include NSF-supported projects focused on states with significant minority populations, the Historically Black Colleges & Universities (HBCU)-Undergraduate Program, the Math and Science Partnership Program, and the Faculty Early CAREER Development Program; faculty

development projects, including the Teagle Foundation-supported Scholarly Productivity Projects for Science and Engineering Faculty at HBCUs and the NASA-supported Scholarly Technical Assistance Project for Principal Investigators of NASA's Faculty Awards for Research Program; the Annenberg/CPB Math and Science Project-supported Minority Mathematics and Science Teacher Leadership Corps; the NSF- and NASA-supported Summer Science Internship Program for undergraduate and graduate students; NASA's residential Summer High School Apprenticeship Research Program (SHARP PLUS); and the GE Fund-QEM Seamless Pathway Project, a pilot initiative in three low-income areas offering a continuum of support for talented mathematics and science students, from middle school to college.

Dr. Alfredo G. de los Santos, Jr. has served as research professor at Arizona State University and as a Senior League Fellow of The League for Innovation in the Community College since his retirement as vice chancellor for student and educational development at the Maricopa Community Colleges. During the 1990s, Dr. de los Santos was principal investigator for a number of grants funded by the NSF, including the Phoenix Urban Systemic Initiative (\$15 million) and the Maricopa Advanced Technology Education Center (\$5 million). He is the founding president of El Paso Community College and served as a dean at Northampton County Community College (PA) and Florida Keys Junior College (FL), and as a librarian at Laredo Junior College (TX). Dr. de los Santos serves on the board of trustees of the Tomas Rivera Policy Institute, Jobs for the Future Inc., National Center for Public Policy and Higher Education, and the Council for Higher Education Accreditation. He is co-principal investigator for two programs funded by the NSF, including the Technical Education Initiative at the Accreditation Board for Engineering and Technology. He has served on the board of the Carnegie Foundation for the Advancement of Teaching, the American Association of Community Colleges, the American Association for Higher Education, the American Council on Education, the United States Open University, and the College Board, among others. He is the recipient of numerous honors and awards, including recognition by the American Council on Education, McGraw-Hill, the Hispanic Association of Colleges and Universities, and the National Science Foundation. Dr. de los Santos earned his associate of arts degree from Laredo Junior College and B.A. (English), M.L.S. and Ph.D. (educational administration) degrees from the University of Texas at Austin.

Joe B. Wyatt is a WAG principal who advises on strategic planning and governance in academia, management and planning of academic R&D organizations, and corporate-academic partnerships. He is chancellor emeritus of Vanderbilt University, having served as chancellor from 1982 to 2000. As chancellor, Mr. Wyatt led Vanderbilt's ascent into the top tier of U.S. teaching and research universities, overseeing the expansion of the university's academic offerings and diversity of the student body and the increase of Vanderbilt's endowment from \$170 million to more than \$2 billion. Previously, Mr. Wyatt was a member of the faculty and administration at Harvard University, serving as vice president for administration from 1976 to 1982. During this period, he led EDUCOM, a consortium of 450 universities that developed computer networks and systems for sharing information and resources. In addition Mr. Wyatt co-authored the book, *Financial Planning Models for Colleges and Universities*, and wrote extensively in the fields of technology, management and education. He has conducted research for the NSF, the Ford Foundation, the Office of Naval Research, and the Eli Lilly Foundation, among others. He is a patentee and consultant in computer system design and computer networking. Mr. Wyatt co-founded the Massachusetts Technology Development Corporation in 1978, a public venture capital group that has financed a large number of successful technology-based companies in Massachusetts. He is currently chairman of the board of the Universities Research Association of Washington, DC and chairman of the Government University Industry Research Roundtable of the National Academy of Sciences. He holds degrees in mathematics from Texas Christian University and the University of Texas at Austin.

APPENDIX 3

CHRONOLOGICAL SITE VISITS

I. University of Texas-Pan American (October 1-3, 2003)

Site visitors from the Washington Advisory Group:

Mr. Joe Wyatt, Team Leader	Dr. Carlos Castillo-Chavez
Dr. Raymond Bye, Jr., Coordinator	Dr. Thomas W. Cole
Dr. Raúl Cárdenas	Dr. Shirley McBay

Visit Overview:

Joe Wyatt, a principal of The Washington Advisory Group, led the site visit to UTPA. The group included a coordinator, Dr. Raymond Bye, and the four additional consultants listed above. The team at times divided into two subgroups (not always including the same individuals at each meeting), which conducted interviews with 14 different groups during the visit. We drew these groups primarily from faculty in a range of academic disciplines. We conducted a special interview with a large group of students involved in research (both graduates and undergraduates). In addition, we had working dinner discussions with deans as well as both initial and final meetings with the university's leadership (the president and several members of his leadership team).

II. University of Texas-Tyler (October 27-29, 2003)

Site visitors from the Washington Advisory Group:

Mr. Joe Wyatt, Team Leader	Dr. Thomas W. Cole
Dr. Raymond Bye, Jr., Coordinator	Dr. Alfredo G. de los Santos, Jr.
Dr. Carlos Castillo-Chavez	Dr. Shirley McBay

Visit Overview:

After a review of the relevant materials provided by UT-Tyler, our team, led by Joe Wyatt, visited the campus October 27-29, 2003. The group included a coordinator, Dr. Raymond Bye, and the four additional consultants listed above. The group met with 16 distinct groups and conducted our meetings and discussions either as an entire team or in two subgroups. We drew the 16 groups primarily from faculty in a broad selection of academic disciplines. We also included undergraduate and graduate students in many of the discussions. In addition, we had working dinner discussions with deans and with the president and his vice presidential team. We also had an opening meeting with the president and several members of his leadership team. Because of a commitment in Austin, President Rodney Mabry was not on-campus on the day of our departure. Mr. Wyatt and Dr. Bye conducted a final telephone de-briefing with the president several days later (November 5). Our conclusions and recommendations are based on this single visit, as well as materials received before and afterward.

III. University of Texas-Brownsville/Texas Southmost College (December 1-3, 2003)

Site visitors from the Washington Advisory Group:

Mr. Joe Wyatt, Team Leader	Dr. Carlos Castillo-Chavez
Dr. Raymond Bye, Jr., Coordinator	Dr. Thomas W. Cole
Dr. Raul Cardenas	Dr. Shirley McBay

Visit Overview:

Mr. Joe Wyatt led our team on this visit. The team was composed of its coordinator, Dr. Raymond Bye, and the four additional consultants listed above. The group met with 14 distinct groups and conducted the meetings and discussions either as an entire team or in one of our two subgroups of three consultants. These UTB/TSC groups consisted primarily of faculty drawn from a broad selection of academic disciplines. In addition, we had a meeting with a community-based group of leaders. We had working dinner discussions with the deans and another with the President Juliet García and Provost José Martín and several of her board of trustee members. In addition, we had an opening meeting with the university leadership, including the president and provost. On the last day of our visit, we held a final debriefing with President García and Provost Martín.

IV. University of Texas at the Permian Basin (December 17-19, 2003)

Site Visitors from the Washington Advisory Group:

Mr. Joe Wyatt, Team Leader	Dr. Thomas W. Cole
Dr. Raymond Bye, Jr., Coordinator	Dr. Alfredo G. de los Santos, Jr.
Dr. Carlos Castillo-Chavez	Dr. Shirley McBay

Visit Overview:

After a review of the relevant materials provided our team, a December 17-19, 2003, The Washington Advisory Group, led by Mr. Joe Wyatt, conducted a site visit to the University of Texas at the Permian Basin. The team included its coordinator, Dr. Raymond Bye, and the four additional consultants listed above. The WAG team met with 15 distinct groups. We conducted the meetings and discussions either as an entire team of six or in one of our two subgroups of three. These UTPB groups consisted primarily of faculty drawn from a broad selection of academic disciplines as well as a group of support staff. In addition, we met with a group of community leaders that included an elected official and leaders of the local Chambers of Commerce in Midland and Odessa, including the Mexican American and Black Chambers. We had working dinner discussions with the deans and another with President David Watts and Vice President for Academic Affairs William Fannin. In addition, we had an opening meeting with the university's leadership, including the president and vice presidents. On the last day of our visit, we held a final debriefing with President Watts, the vice presidents, deans, and assistant vice president for graduate Studies and sponsored research.