

Economic Impact Study

A Study of the Economic Impact of
The University of Texas System | Executive Summary

Institute for



Economic Development

The University of Texas at San Antonio

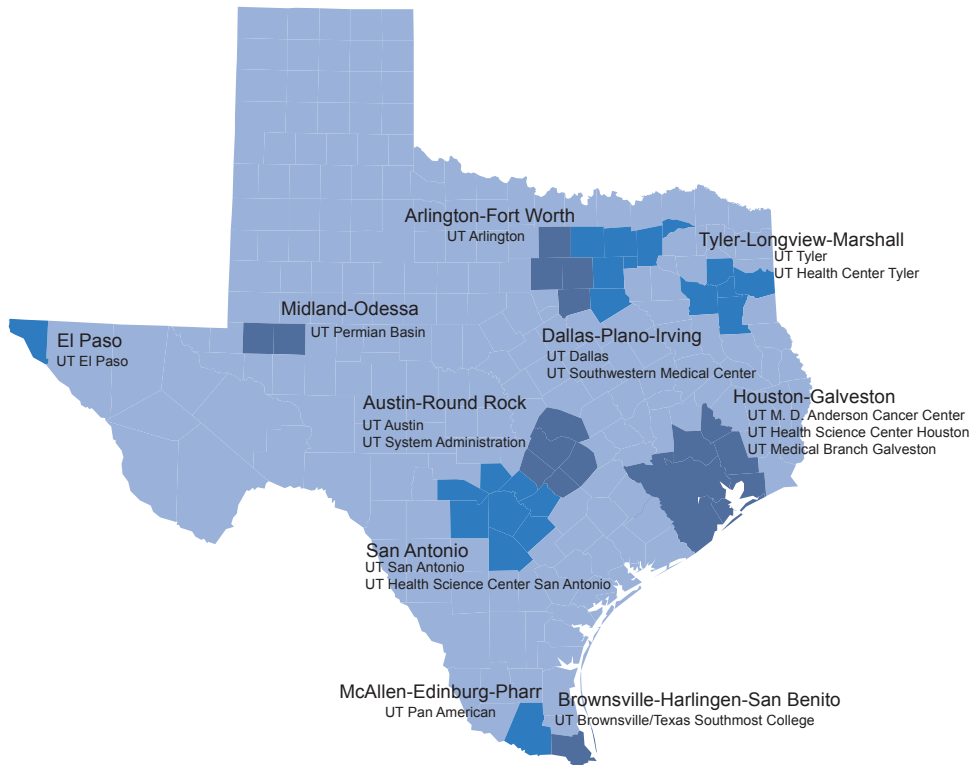
Taking Investment in Higher Education to the Next Level:

UT strengthens the Texas economy of today and tomorrow.

The State of Texas invests in higher education in order to develop the human capital of the state. These investments result in long-term economic benefits including: productivity and earnings gains of an educated workforce, new knowledge creation, market entry of products and services as a by-product of research and development, a supply of skilled professionals to meet labor market demands, and an improvement in the general quality of life, among other things. Within each region served by a University of Texas institution local businesses benefit from easy access to a large pool of part-time and full-time workers. These benefits are particularly important when unemployment rates are low and labor markets tight. Companies and agencies that depend on highly specialized skills often cluster around universities, and this may be particularly true of high-tech and information-based companies. **There is a consistent positive correlation between the percentage of college graduates within a state and the per capita income for that state.**

Regions receive multiple benefits, including short-run economic benefits, on a yearly basis from having a university in their back yard. Universities purchase goods and services from businesses, who in turn, employ more citizens and purchase goods and services from other local businesses. These expenditures represent the multiplier effect of the university's expenditures. This same multiplier effect is also reflected in the university's expenditures on construction and capital improvements and in the expenditures of faculty, staff and students on local goods and services.

The University of Texas System by Region



“A more-educated population also results in less stress on social services, higher family incomes and increased purchases of consumer goods. If the enrollment gap were closed, it would increase the state’s tax revenue by \$21 billion a year.”

- Steve Murdock, State Demographer
Statement to The Texas Higher Education Coordinating Board,
November 2004

Statewide Economic Impact

In its host regions, The University of Texas System adds \$4 billion in personal income with a total economic impact of \$12.8 billion.

UT expenditures for FY2004 totaled \$7.8 billion from all sources. **State appropriations represented \$1.6 billion or about 20 percent of this total and play a critical role in funding the core educational mission of the UT Institutions.**¹

The balance of the FY2004 expenditures include a vast array of contracted services affecting all Texans. These services including patient care through UT affiliated hospitals and clinics; contracts and research grants with the Federal government, businesses and nonprofits; services to students such as housing and food, parking, recreation in addition to education. The balance of FY2004 expenditures also includes gifts received from individual donors, often conditioned to the area of philanthropic interest by the donor. While state appropriations constitute only 20 percent of the total expenditures their role is vital to supporting the educational mission and enabling UT to engage in the many other public services benefiting all of Texas.

The total economic impact of the 15 institutions and administration on the respective host economies was \$12.8 billion during FY2004. Of the total economic impact, \$8.7 billion, or 68 percent was the initial direct spending of the institutions (\$7.8 billion) and nonresident students (\$975 million). An additional \$4.1 billion was spent in host regions as dollars re-circulated. **For every dollar in initial spending, an average of 44 additional cents was spent within host regions.**

UT adds \$4 billion in personal income (an element of the output impact) in its host regions as a result of the initial spending of the institution, faculty, staff and nonresident students. Personal income includes salary, wage and proprietor income, which directly impact people’s pocketbooks.

The UT System Institutions Annual Impact on Regional Economies

| Expenditures | Initial Direct Spending | Output Impact (Initial + Recirculated) | Personal Income Impact* | Employment Impact* |
|---------------|-------------------------|--|-------------------------|--------------------|
| Operations | \$2,333,000,000 | \$3,670,000,000 | \$1,400,000,000 | 137,200 |
| Capital | 1,212,000,000 | 1,969,000,000 | 737,000,000 | 20,600 |
| Faculty/Staff | 4,184,000,000 | 5,703,000,000 | 1,400,000,000 | 40,500 |
| Student | 975,000,000 | 1,467,000,000 | 476,000,000 | 17,200 |
| Total | \$8,704,000,000 | \$12,809,000,000 | \$4,013,000,000 | 215,500 |

**Direct employment by the UT System institutions included in the operations impact, for both full and part-time jobs which are included in employment impacts. Personal income impact is included in the output impact.*

Employment Impact

These output and income impacts are better understood when translated to the number of jobs added or supported in a region as a result of the presence of a UT institution. **The combined employment impact of all 15 institutions on their host regions was 215,500 jobs.** This includes the on-campus employment of 87,800 jobs (including student workers) and the 127,700 jobs in the local region supported by the additional economic impact. On average, **for every on-campus job, an additional 1.5 jobs are added** because of institutional related spending.

Another viewpoint on the state's investment is to look at the "exports" of educational and research services to out-of-state customers. This brings in outside new resources, which, absent UT System activities, could very well go to non-Texas universities. **The state's \$1.6 billion direct investment brings in a total economic impact of \$2.3 billion from out-of-state resources alone.**

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Future Earnings Impact

Perhaps the most compelling demonstration of the state's return on its UT System investment for one year is an estimate of the Net Present Value (NPV) of the future additional earnings by graduates as a measure of future increased productivity to the Texas economy. If the state's appropriations to higher education are viewed as an investment and the incremental earnings of its graduates as resulting benefits (those future earnings result in additional indirect and induced spending, as well as produce indirect and induced employment), we can determine the financial soundness of the state's investment. An estimate of the UT System's aggregate incremental earnings impact from its **34,900 degrees awarded in FY2004 alone would be \$44.6 billion. Assuming 86 percent of graduates remain in Texas, a total incremental earnings impact is \$38.4 billion.**

Comparing the total work-life incremental earnings with the state's FY2004 appropriations, we see that this public version of NPV would be positive in excess of \$43 billion for all UT System graduates in 2004. **The ratio of the state's investment of \$1.6 billion to the \$38.4 billion of incremental earnings is \$1 to \$24.** In other words, **every \$1 the state invests in UT System higher education acts as a catalyst for, and ultimately results in, an additional \$24 of gross, work-life incremental earnings that go into the Texas economy.**

Looking at this investment from an individual standpoint, **the incremental lifetime earnings for a bachelor's degree recipient would typically add over \$1 million beyond the baseline average for a high school degree only.** The College Board estimates that on average, total expenses (tuition, fees, etc.) per year at a public four-year institution were \$14,600 for resident students in FY2004. If taken as an approximation of a family's investment in a bachelor's degree, the investment would be \$58,600 for a degree completed in four years, \$73,200 for completion in five years, and \$87,800 for completion in six years. While these figures would vary, depending on types of financial aid, region, opportunity cost, and many other individual factors, **the total investment is still comparatively small compared with a college graduate's estimated lifetime benefit in earnings.**

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Construction Impact

Capital expenditures contributed an estimated economic impact on the Texas economy of \$2 billion in local regions.

During FY2004 UT institutions spent approximately \$1.2 billion on capital items including construction of facilities, equipment, vehicles, books and art. These capital expenditures contributed to an estimated total aggregate **economic impact of \$2 billion** upon the regions where UT institutions are located (\$757 million beyond the initial expenditures). Capital expenditures support \$737 million in personal income and approximately **20,600 jobs**.

This analysis shows the economic impact for one year of capital spending. The need for capital construction is driven by the growth in health services (hospital and clinic space), research (laboratory space) enrollment (classroom space, housing and parking). It is also driven by the need to renew and upgrade aging infrastructure (the average age of UT campus buildings is 30 years). During the next six years, UT institutions are projected to spend an estimated **\$5 billion on construction projects**. Additional expenditures as a result of these purchases will add \$2.7 billion for a combined impact of **\$7.7 billion over the next six years**.

Of the projected \$5 billion in capital construction, \$3.2 billion will be at the health institutions to support the growing demand for services and health related research. Patient care and research revenues from activities in these buildings finance debt that supports most of this construction. Another substantial portion of capital construction builds auxiliary facilities such as housing, parking and recreation, typically financed by debt retired from revenues generated by facility use.

The state supports capital construction primarily through authorization of tuition revenue bonds (TRB). **Overall TRB funding comprises 10 percent of the UT System capital construction program, yet TRB funding plays an essential role in providing educational space in academic institutions.** While space utilized for research, patient-care and auxiliary services can often be self-funded through related revenues to support the debt, that is not the case for academic educational space.

Projected Capital Improvement Spending by Institution

| Academic Institutions | 2004-2009 | Health Institutions | 2004-2009 |
|-----------------------|---------------|-----------------------|------------------------|
| UTA | \$154,000,000 | UTSWMC | \$446,000,000 |
| UT Austin | 688,000,000 | UTMB Galveston | 348,000,000 |
| UTB/TSC | 41,000,000 | UTHSC-H | 443,000,000 |
| UTD | 136,000,000 | UTHSC-SA | 125,000,000 |
| UTEP | 103,000,000 | UTMDACC | 1,876,000,000 |
| UTPA | 66,000,000 | UTHC-T | 18,000,000 |
| UTPB | 26,000,000 | | |
| UTSA | 447,000,000 | | |
| UTT | 66,000,000 | Combined Total | \$4,983,000,000 |

Nonresident Students' Impact

Universities can serve the needs of local people as well as attract individuals from other locations. During the years that these individuals attend college, they contribute to the economy by spending on goods and services, circulating “new money” within the local economy.

In Fall 2003, a total of 177,700 students were enrolled at UT institutions. These students spent over \$1.9 billion dollars in their local economies for goods and services. Of the total \$1.9 billion dollars, \$975 million can be considered “new money” – money spent by residents of other areas, including foreign and out-of-state students.

Considering the direct expenditures from new money alone (purchases by students from outside of the region), an additional \$492 million is spent in local regions as a result of the presence of a UT institution for a total of \$1.5 billion dollars. **These direct and indirect expenditures support 17,200 jobs.**

Some of the students from other states and abroad remain in Texas and contribute in many different ways to the state’s economic well-being. In the short-term, these students bring in new dollars not only to their local regions, but to the state in general. **Spending by these foreign and out-of-state students was estimated to be \$256 million.** This does not include the additional impacts due to the second round effects of businesses and employees.

Health Care Impact

UT health institutions have unique impacts beyond education. These health institutions serve Texas and their regions by providing health care services, including uncompensated health care. Collectively, these institutions add **\$7.7 billion and 111,700 jobs** into their local regions. **This is approximately 60 percent of the total UT System economic impact and slightly more than half of the overall job impacts.**

A report on the impact of higher education from the Texas Comptroller’s Office identifies medical services performed by the UT System in FY2001 valued at \$3.7 billion. **This care included hospital inpatient and outpatient services as well as physician services.² By fiscal year 2004, the service levels had increased to more than \$5.8 billion.** The UT System provided nearly \$1.3 billion in uncompensated health care in the six health institutions in FY2004. An additional \$195 million in medical services were provided for which payments were not collectible.

Many studies show that higher education is positively correlated with individual and social health. On the most recent census, 11.3 percent of high school graduates were below the poverty line, compared with 4.2 percent of baccalaureate degree recipients. 18.8 percent of high school graduates lacked health insurance, compared with 8.4 percent of college graduates. **Within every income group, the percentage perceiving themselves as very healthy increases with higher levels of education.** For example, 73 percent of college graduates with incomes between \$35,000 and \$55,000 report being in excellent or very good health, compared to 62 percent of high school graduates in the same income bracket.

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Total Economic Impacts of The University of Texas Institutions on their Regional Economies FY2004

| Institutions | Initial Direct Spending | Output Impact (Initial + Recirculated) | Personal Income Impact* | Employment Impact* |
|--|-------------------------|--|-------------------------|--------------------|
| UT Arlington | | | | |
| Operations | \$69,556,004 | \$112,259,554 | \$41,789,450 | 6,278 |
| Capital | \$49,367,016 | \$84,817,485 | \$31,964,486 | 910 |
| Faculty/Staff Expenditures | \$138,025,486 | \$193,017,834 | \$48,693,699 | 1,424 |
| Student Expenditures | \$145,174,201 | \$226,725,219 | \$75,152,923 | 2,535 |
| Subtotal | \$402,122,707 | \$616,820,092 | \$197,600,558 | 11,147 |
| UT Austin | | | | |
| Operations | \$385,012,413 | \$566,774,370 | \$214,439,165 | 33,098 |
| Capital | \$178,115,157 | \$230,792,812 | \$54,278,563 | 1,601 |
| Faculty/Staff Expenditures | \$771,536,874 | \$998,990,129 | \$230,132,393 | 6,898 |
| Out-of-Region Student Expenditures | \$440,169,019 | \$639,732,986 | \$205,318,162 | 7,366 |
| Subtotal | \$1,774,833,463 | \$2,436,290,297 | \$704,168,283 | 48,963 |
| System Administration | | | | |
| Operations | \$30,956,419 | \$47,068,415 | \$18,876,715 | 1,934 |
| Capital | \$3,458,743 | \$4,987,542 | \$1,832,825 | 43 |
| Faculty/Staff Expenditures | \$20,768,969 | \$26,871,884 | \$6,205,933 | 186 |
| Student Expenditures | \$0 | \$0 | \$0 | 0 |
| Subtotal | \$55,184,131 | \$78,927,841 | \$26,915,473 | 2,163 |
| UT Brownsville/Texas Southmost College | | | | |
| Operations | \$41,958,039 | \$62,294,934 | \$24,961,604 | 3,009 |
| Capital | \$14,407,181 | \$19,161,194 | \$4,269,026 | 226 |
| Faculty/Staff Expenditures | \$44,478,185 | \$54,371,719 | \$10,966,512 | 484 |
| Student Expenditures | \$8,954,053 | \$12,469,309 | \$3,887,027 | 187 |
| Subtotal | \$109,797,458 | \$148,297,156 | \$44,084,169 | 3,906 |
| UT Dallas | | | | |
| Operations | \$49,521,367 | \$78,608,269 | \$28,936,420 | 3,803 |
| Capital | \$21,104,802 | \$34,869,292 | \$13,413,115 | 488 |
| Faculty/Staff Expenditures | \$102,467,750 | \$142,658,007 | \$37,373,461 | 967 |
| Student Expenditures | \$59,432,823 | \$92,109,577 | \$30,972,677 | 949 |
| Subtotal | \$232,526,742 | \$348,245,145 | \$110,695,673 | 6,207 |
| UT Southwestern Medical Center - Dallas | | | | |
| Operations | \$224,858,798 | \$355,857,535 | \$133,001,084 | 9,201 |
| Capital | \$133,367,616 | \$229,443,673 | \$95,843,191 | 2,872 |
| Faculty/Staff Expenditures | \$461,782,813 | \$642,904,882 | \$168,427,847 | 4,358 |
| Student Expenditures | \$14,046,079 | \$21,768,754 | \$7,319,940 | 224 |
| Subtotal | \$834,055,306 | \$1,249,974,844 | \$404,592,062 | 16,655 |
| UT El Paso | | | | |
| Operations | \$82,454,454 | \$124,962,864 | \$47,040,218 | 6,148 |
| Capital | \$33,618,070 | \$51,639,382 | \$16,940,001 | 671 |
| Faculty/Staff Expenditures | \$106,002,804 | \$136,596,593 | \$29,795,637 | 1,089 |
| Student Expenditures | \$101,885,323 | \$149,803,438 | \$46,415,507 | 1,861 |
| Subtotal | \$323,960,651 | \$463,002,277 | \$140,191,363 | 9,769 |
| UT Pan American | | | | |
| Operations | \$58,856,507 | \$86,298,729 | \$32,311,502 | 4,939 |
| Capital | \$21,448,885 | \$28,732,209 | \$7,082,533 | 360 |
| Faculty/Staff Expenditures | \$76,978,970 | \$93,735,046 | \$19,028,770 | 765 |
| Student Expenditures | \$30,271,285 | \$42,022,924 | \$13,731,738 | 645 |
| Subtotal | \$187,555,647 | \$250,788,908 | \$72,154,543 | 6,709 |

*Direct employment by the UT System institutions included in the operations impact, for both full and part-time jobs which are included in employment impacts. Personal income impact is included in the output impact.

Total Economic Impacts of The University of Texas Institutions on their Regional Economies FY2004

| Institutions | Initial Direct Spending | Output Impact (Initial + Recirculated) | Personal Income Impact* | Employment Impact* |
|---|-------------------------|--|-------------------------|--------------------|
| UT Medical Branch - Galveston | | | | |
| Operations | \$405,433,520 | \$658,614,196 | \$255,936,118 | 19,307 |
| Capital | \$64,215,615 | \$101,810,193 | \$36,412,991 | 924 |
| Faculty/Staff Expenditures | \$723,696,474 | \$1,005,433,452 | \$252,408,957 | 6,883 |
| Student Expenditures | \$11,749,025 | \$20,565,076 | \$6,274,373 | 212 |
| Subtotal | \$1,205,094,634 | \$1,786,422,917 | \$551,032,439 | 27,326 |
| UT Health Science Center - Houston | | | | |
| Operations | \$167,793,160 | \$273,005,111 | \$105,535,696 | 7,858 |
| Capital | \$32,772,213 | \$53,470,339 | \$20,244,273 | 494 |
| Faculty/Staff Expenditures | \$327,643,618 | \$455,196,174 | \$114,274,685 | 3,116 |
| Student Expenditures | \$17,990,318 | \$27,729,818 | \$9,046,301 | 292 |
| Subtotal | \$546,199,309 | \$809,401,442 | \$249,100,955 | 11,760 |
| UT M. D. Anderson Cancer Center | | | | |
| Operations | \$569,192,540 | \$912,907,159 | \$354,508,517 | 23,750 |
| Capital | \$461,664,411 | \$798,874,691 | \$334,470,005 | 7,667 |
| Faculty/Staff Expenditures | \$905,231,419 | \$1,257,640,495 | \$315,724,245 | 8,610 |
| Student Expenditures | \$309,085 | \$478,078 | \$155,283 | 5 |
| Subtotal | \$1,936,397,455 | \$2,969,900,423 | \$1,004,858,050 | 40,032 |
| UT Permian Basin | | | | |
| Operations | \$13,357,953 | \$18,850,629 | \$6,079,814 | 945 |
| Capital | \$12,940,158 | \$20,467,170 | \$7,519,456 | 261 |
| Faculty/Staff Expenditures | \$14,557,196 | \$18,096,262 | \$3,731,089 | 138 |
| Student Expenditures | \$10,558,969 | \$14,531,408 | \$4,317,939 | 185 |
| Subtotal | \$51,414,276 | \$71,945,468 | \$21,648,298 | 1,529 |
| UT San Antonio | | | | |
| Operations | \$70,159,177 | \$113,949,681 | \$42,289,054 | 5,652 |
| Capital | \$96,086,636 | \$162,120,301 | \$59,670,958 | 1,924 |
| Faculty/Staff Expenditures | \$120,456,765 | \$167,516,557 | \$40,969,773 | 1,379 |
| Student Expenditures | \$93,828,620 | \$156,112,360 | \$52,629,874 | 2,012 |
| Subtotal | \$380,531,198 | \$599,698,899 | \$195,559,659 | 10,967 |
| UT Health Science Center - San Antonio | | | | |
| Operations | \$108,035,347 | \$174,177,969 | \$65,457,550 | 7,627 |
| Capital | \$51,265,121 | \$86,594,991 | \$31,734,244 | 1,262 |
| Faculty/Staff Expenditures | \$282,503,651 | \$392,871,551 | \$96,085,181 | 3,234 |
| Student Expenditures | \$16,296,850 | \$26,277,562 | \$8,584,119 | 305 |
| Subtotal | \$458,100,969 | \$679,922,073 | \$201,861,094 | 12,428 |
| UT Tyler | | | | |
| Operations | \$17,252,541 | \$25,886,264 | \$8,407,325 | 1,343 |
| Capital | \$14,942,242 | \$24,976,176 | \$8,959,872 | 300 |
| Faculty/Staff Expenditures | \$23,923,550 | \$31,600,645 | \$7,127,584 | 258 |
| Student Expenditures | \$24,189,131 | \$36,251,913 | \$11,989,426 | 450 |
| Subtotal | \$80,307,464 | \$118,714,998 | \$36,484,207 | 2,351 |
| UT Health Center - Tyler | | | | |
| Operations | \$39,616,757 | \$58,877,306 | \$20,345,193 | 2,274 |
| Capital | \$22,872,745 | \$36,065,433 | \$11,924,590 | 579 |
| Faculty/Staff Expenditures | \$64,358,873 | \$85,011,709 | \$19,174,549 | 694 |
| Student Expenditures | \$0 | \$0 | \$0 | 0 |
| Subtotal | \$126,848,375 | \$179,954,448 | \$51,444,332 | 3,547 |

*Direct employment by the UT System institutions included in the operations impact, for both full and part-time jobs which are included in employment impacts. Personal income impact is included in the output impact.

Study Methodology

Sources:

¹ Fast Facts 2004 and Annual Financial Reports FY2004. The University of Texas System. Austin: 2004.

² Carole Keeton Strayhorn, Texas Comptroller of Public Accounts. Special Report: The Impact of the State Higher Education System on the Texas Economy. Austin: Texas Comptroller, 2003. <<http://www.window.state.tx.us/specialrpt/highered03/highered03.pdf>>.

The economic benefits derived from The University of Texas System were estimated for four important categories of expenditures: goods and services for each institution (operations), capital purchases and construction, faculty and staff expenditures and the spending of students who moved to the area to attend school. The economic impact estimates are based upon input-output models of each institution's regional economy, readily available data from the UT System Administration and certain assumptions. These estimates show the economic impact upon each regional economy and are not intended to show the overall impact to the state. However, these effects do have an aggregate impact in Texas.

Due to the scope and limitations of this initial study phase, several important categories of additional economic impacts remain for further study.

These additional economic impacts would include:

- visitor spending
- research and development additional impacts
- workforce and industry implications
- public services
- quality of life benefits to the community

The full report and a detailed methodology is available on the Internet at www.iedtexas.org.

Acknowledgments

Institute for  **Economic** Development
The University of Texas at San Antonio

501 West Durango Boulevard
San Antonio, Texas 78207

T: 210.458.2020
F: 210.458.2425

www.iedtexas.org

The Institute for Economic Development at The University of Texas at San Antonio prepared this report upon the request of The University of Texas System Administration.

The research team included Institute staff, faculty and student researchers, supplemented with an outside team of expert advisors to review study methodology, findings and interpretations. Numerous individuals and offices in the UT System Administration supplied standard Annual Financial Reports for FY2004, enrollment and accountability data.

Research Team members include: Robert McKinley, Michael E. Cline, Gary Bridges, James Ford, Jennifer T. Martinez, Jessica Bybee-Dziedzic and Peter C. Morales.

Expert Advisors Team members include: Ray Perryman, Lynda de la Viña, Steve Murdock, Kerry Kennedy, Joseph Stafford, Jude Valdez and Albert Carrisalez.

