

**Texas Engineering Experiment Station**

**Compact with The Texas A&M University System  
FY 2008 – 2009**

## **MISSION**

The mission of the Texas Engineering Experiment Station is to produce and transfer the highest quality, relevant engineering and technology-oriented research by leveraging capabilities statewide in order to:

- Support inter-disciplinary fundamental and applied research,
- Enhance educational systems,
- Improve economic development and quality of life in Texas and the nation, and
- Transfer technology from R&D activities to useful applications.

## **VISION**

The Texas Engineering Experiment Station will be a national, state and local higher education leader in performing quality research that results in practical answers to critical state and national needs, and in strengthening research leadership across the state.

## **CEO STATEMENT**

The Morrill Act of 1862 signed by President Lincoln extended the role of higher education from education and research to service and outreach to meet the needs of the people. This led to the creation of land-grant universities. The idea behind this seminal legislation that was embraced by the State of Texas is as relevant today as it was in 1876: that higher education should be open to all, that it ought to be practical, and that it ought to be shared with people beyond the boundaries of the campus. Through this model, the seven state agencies of The Texas A&M University System play a key role in setting us apart among higher education systems in Texas in a unique and positive manner. The agencies serve as the link between many Texas citizens and practitioner education and training, technology and research. As is often cited, the A&M agencies are the “glue” that binds the System together with its broad range of external constituencies.

Consistent with the historical land-grant responsibility, the Texas Engineering Experiment Station is structured to maximize research and educational partnerships across the state and form a network that works to bring together subject matter expertise from universities, agencies, industry and communities to address critical issues facing the state. The agency is strongly committed to conducting the highest quality research that will provide practical answers to critical state and national needs. TEES has enjoyed remarkable success in recent years in fulfilling the mission laid out by the State Legislature and the federal research priorities. TEES is currently involved with more than 3,300 research projects and over 1,800 industry partnerships on an ongoing basis. The majority of the external research dollars generated by the agency continues to be from federal sponsors, including major initiatives with the National Science Foundation, the Department of Defense and NASA. Relevant research funding from the private sector has also remained strong at TEES through research centers that serve a broad range of industries such as commercial aerospace, energy,

materials, semiconductors, offshore petroleum exploration, manufacturing and chemical processing, among others.

The goals and objectives in the Strategic Plan of the Texas Engineering Experiment Station track the requirements of the State of Texas and follow the agency structure approved by the Legislative Budget Board and the Governor's Office of Budget and Planning.

The plan has five goals, with underlying objectives, strategies and metrics. Overall performance and accountability measures that best indicate progress toward the agency's strategic objectives and most accurately define the mission of the agency have been developed in conjunction with the State's budget offices.

This Compact focuses on three of the agency's goals in its Strategic Plan, listed in this document as priorities in the format established by the System. The priorities presented focus on the agency's core function – enhancing the state's research capacity in order to attract additional federal dollars and resources to the State of Texas. Secondly, the Compact addresses the State's critical need to encourage more talent to enter the fields of science, technology, engineering, and mathematics. TEES believes that investments in education and technology offer the best hope for the future of the state. With a technically literate workforce, more engineers and scientists, and a steady stream of technological developments, Texas' economy can continue to diversify, to grow, and to provide all Texans with a high quality standard of living.

**Priority #1: Support and invest in research efforts that are relevant to external sponsors, are aligned with funding opportunities and which make an impact on technology development and commercialization.**

Link to Strategic Plan: This is Goal 1 of the TEES Strategic Plan

**1<sup>st</sup> Objective of Priority #1:**

**Set research priorities based upon capabilities, relevance to pressing issues, opportunities for success, and ability to sustain external support**

Strategies:

- Conduct an analysis of recent TEES funding history and the factors influencing revenue streams in order to define tactics to increase research funding by the end of the second quarter of FY08.
- Build new and/or closer relationships with energy and defense agencies by the end of FY 08 for the Department of Energy and by the end of FY 09 for the Department of Defense. This will be accomplished through increased interaction with the federal agencies by matching opportunities for demonstrating TEES capabilities with key agency divisions and individuals.
- Develop alliances with industry in the energy area through increased interaction with industry representatives through hosting industry representatives on campus and industry on-site visits by the end of FY 08. Interactions with industry will provide opportunities to discuss and demonstrate TEES capabilities that provide answers for industry.
- Develop a process with OTC for the careful selection and approval of patents through quarterly meetings by the end of the third quarter of FY 08.

Performance Measures:

- A 2 percent increase in dollar value of external research awards by the end of FY 08 and a 3 percent increase in dollar value of external research awards by the end of FY09 (assuming timely passage by Congress of the federal budget—see “Challenges”). Historically, TEES external awards have been, in millions: FY02, \$86; FY03, \$84; FY04, \$100; FY05, \$91; FY06, \$79, FY07 \$73
- Increase in disclosures to 50 in FY 08 and 52 in FY 09. Historically, TEES disclosures have been: FY 05, 54; FY 06, 48; FY 07, 47.

Budget Impact and/or Resources Required:

- New investment in personnel directly responsible for building federal agency relationships, including salary support and travel costs at an estimated additional cost of \$87,000 from retained indirect costs.
- Costs of developing a process with OTC for careful selection and approval of patents are estimated to be \$125,000 from retained indirect costs.

Challenges to Success:

- Research funding levels available in federal agencies, industry funded research and by Congress.
- The challenge of increased competition for federal research dollars will be addressed through building closer relationships with program officers, industry representatives and Congressional staff.
- Cost of patent expenses will be addressed through working closely with OTC and jointly developing a careful selection and approval process.

Collaboration/Support Needed (Internal and External to A&M System)

- Increased allocation of PUF equipment funds
- Culture of interdisciplinary cooperation toward identified priorities with A&M System institutions and funds provided by the System for recruiting, hiring, and retaining outstanding faculty members.
- Close collaboration and synergy with the Vice Chancellor for Engineering and the research priorities and activities of Texas A&M Engineering

**Priority #2: Build research capacity across the state**

Link to Strategic Plan: This is Goal 2 of the TEES Strategic Plan

**1<sup>st</sup> Objective of Priority #2:**

**Enhance junior faculty research development and senior research leadership while fostering partnerships throughout The Texas A&M University System and the TEES divisions.**

Strategies:

- The Office of Strategic Research Development will conduct NSF workshops related to federal funding opportunities for prestigious awards by the end of the third quarter F Y 08 including: (1) CAREER (Faculty Early Career Development funding); (2) S-STEM (Scholarships in Science, Technology, Engineering, and Mathematics for undergraduates); (3) CCLI (Course, Curriculum, and Laboratory Improvement); and, (4) STEP (Science, Technology, Engineering and Mathematics Talent Expansion Program targeting retention and recruitment of STEM majors). In addition, a workshop focused on ONR/AFOSR (Office of Naval Research/Air Force Office of Scientific Research) funding for tenure-track faculty will be conducted by the end of the fourth quarter FY 08.
- The Office of Research Services will communicate research funding opportunities through (1) monthly electronic newsletters targeted to researchers in all TEES divisions, (2) TEES website and TEES Portal, (3) targeted individual emails to researchers (4) subscription service to Genius/Smarts and InfoEd.
- Development and submission of a competitive federal center-level proposal linking two-year and four-year institutions within the 12 month period
- Submit proposals involving TEES regional divisions targeting science, technology, engineering, and mathematics (STEM) fields within the two-year time period

Performance Measures:

- Increase the number of workshop participants in FY 08 to 110 and in FY 09 to 120. Historically, the workshop participants have numbered: FY05, 79; FY06, 103; FY07, 108.
- Increase the number of proposal submissions in FY 08 to 1183 and in FY 09 to 1250.

Budget Impact and/or Resources Required:

- Costs for conducting workshops are estimated to be \$40,000 from retained indirect costs (does not include any salary costs)
- Costs for communicating funding opportunities are estimated to be \$35,000 from retained indirect costs.
- The estimated costs for the regional liaison activities are \$186,000 from retained indirect costs.

Challenges to Success:

- Alignment of TEES research directions with federal funding opportunities through working closely with partner institutions.
- Institutional support for research (e.g., release time for PIs, etc) through working closely with partner institutions.
- Shifts in federal funding opportunities
- Amount of IDC retained

Collaboration/Support Needed (Internal and External to A&M System)

- Coordination with university presidents on institutional collaborations including TAMUS, TAMU, HSC, and community colleges.

**Priority #3: Strengthen math, science, engineering and technology education at all levels**

Link to Strategic Plan: This is Goal 3 of the TEES Strategic Plan

**1<sup>st</sup> Objective of Priority #3:**

**Increase K-16 student participation in science, math and engineering degrees programs and engage undergraduate and graduate students in research activities**

Strategies:

- Expand the agency programs that provide applied research experiences for undergraduates and K-12 teachers, and extend these programs into targeted high schools by the end FY 08.
- Establish partnerships with two-year schools and industry by the end of the third quarter of FY 08.

Performance Measures:

- Increase the number of undergraduate students engaged in research activities to 395 by the end of FY 08 and to 400 by the end of FY 09. Historically, the numbers have been: FY02, 287; FY03, 323; FY04, 320; FY05, 325; FY06 343, FY07, 390
- Enroll 10 teachers in the Research Experience for Teachers program for FY 08 and 12 teachers for FY 09 (provided NSF funds the RET program).
- Establish at least 3 partnerships or proposal partnerships with two-year schools and industry by the end of FY 08 and 5 partnerships or proposal partnerships with two-year schools and industry by the end of FY 09.

Budget Impact and/or Resources Required:

- Expansion and investment in proposal development and contract administration services at an estimated cost of \$135,000 for FY 08 and \$135,000 for FY09.

Challenges to Success:

- Sustained funding commitments from federal and state agencies for educational initiatives through working closely with the program officers in applicable agencies.
- Sustained commitments from school districts for participation in the programs through close, working relationships with school administrators and teachers.

Collaboration/Support Needed (Internal and External to A&M System)

- Participation from regional universities, community colleges and school districts in funded projects.

**Compact Review and Approval**

Date: November 9, 2007

TAMUS Member: Texas Engineering Experiment Station

Signature: **[ORIGINAL SIGNED BY]**

TAMUS Member CEO: K. L. Peddicord, Ph.D.  
Director, Texas Engineering Experiment Station

Signature: **[ORIGINAL SIGNED BY]**

TAMUS Vice Chancellor: G. Kemble Bennett, Ph.D.  
Vice Chancellor for Engineering,  
The Texas A&M University System  
Dean of Dwight Look College of Engineering,  
Texas A&M University

Signature: **[ORIGINAL SIGNED BY]**

TAMUS Chancellor: Michael D. McKinney  
Chancellor, The Texas A&M University System