



TEXAS ENGINEERING
EXPERIMENT STATION

STRATEGIC PLAN
FISCAL YEARS 2011 - 2015



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EXPERIMENT STATION

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Director's Message



G. Kemble Bennett, Ph.D., P.E.

Vice Chancellor and Dean of Engineering
Director, Texas Engineering Experiment Station
Harold J. Haynes Dean's Chair Professor

For more than 90 years, the Texas Engineering Experiment Station (TEES) has served the citizens of Texas through engineering and technology-oriented research and educational collaborations. Recognized for forming strong partnerships, fostering an entrepreneurial culture and maximizing opportunities to leverage state dollars, TEES must remain vigilant in continuous planning to adapt to the changing landscape of the future. This Strategic Plan represents a process as well as a plan, one in which we identify how we can best meet the needs of the public we serve.

It provides guidance to achieve the future we desire and establishes the basis for helping the agency prioritize its resources. Unprecedented opportunities and challenges lie ahead. TEES recognizes and embraces its responsibilities to contribute solutions to societal and technical problems and remains steadfastly committed to continuing its leadership role.



Kenneth R. Hall, Ph.D.

Deputy Director, Texas Engineering Experiment Station
Senior Associate Dean for Research

Research conducted by institutions of higher education has made a significant impact on the health, safety and quality of life of Texas citizens and has contributed to the state's economic growth and development. To remain competitive globally, we must not only create new technologies, but learn to more effectively translate these technologies into commercial products and to transfer a technical competence among new entrants to the workforce. TEES achieves this through the strength of its diverse human capital, including full-time research personnel, university faculty, graduate and undergraduate students and talented support staff — all of whom serve in partnership with the private sector. This Strategic

Plan outlines the framework that will support TEES research and development as the force behind the transformation of existing industries and educational systems.

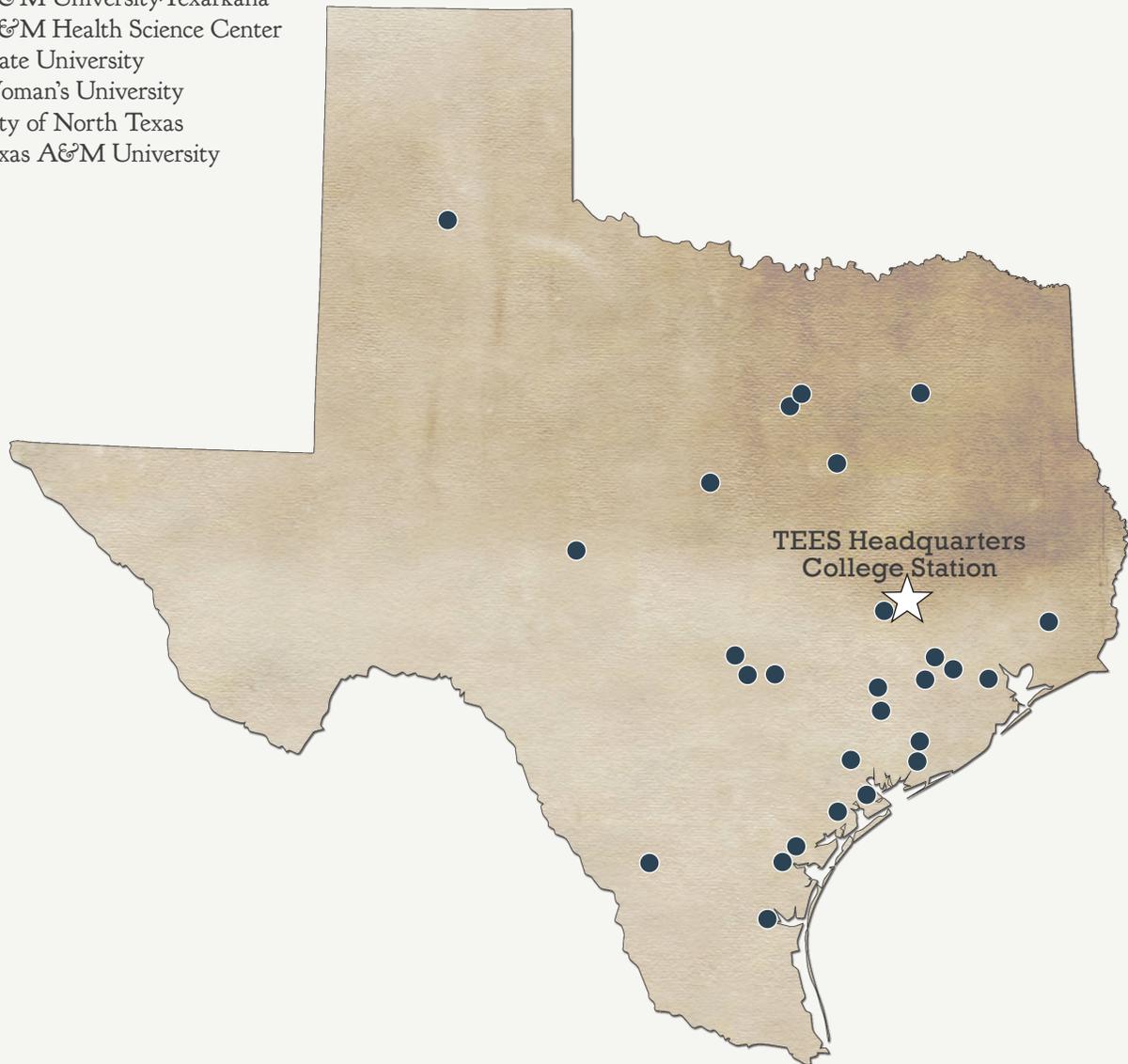
Statewide Partners

Texas University Partners

Angelo State University
Lamar University
Prairie View A&M University
Tarleton State University
Texas A&M International University
Texas A&M University
Texas A&M University-Commerce
Texas A&M University-Corpus Christi
Texas A&M University-Kingsville
Texas A&M University-Texarkana
Texas A&M Health Science Center
Texas State University
Texas Woman's University
University of North Texas
West Texas A&M University

Two-year College Partners

Amarillo College
Brazosport College
Del Mar College
Texas State Technical College
Wharton County Junior College
Victoria College



As the engineering research agency of Texas, the Texas Engineering Experiment Station (TEES) has addressed critical state and national needs through quality research and technology development for nearly 100 years.

One of seven state agencies within The Texas A&M University System, TEES was established in 1914 as part of the Texas land-grant university system. Under state statute (Chapter 88, Subchapter E, Texas Education Code), TEES develops innovations in research, education and technology, and offers solutions that help improve quality of life, foster economic development and enhance education.

TEES plays an important role in the higher education system of Texas and has an impact on every region of the vast state. Consistent with its historical land-grant responsibility, the TEES structure maximizes research and educational partnerships across the state and forms a network that brings together subject matter expertise from universities, agencies, industry, K-12 school districts and communities.

TEES serves as a catalyst for collaborations that position Texas to be especially competitive for federal dollars and plays a major role in strengthening research leadership across the state. Headquartered in College Station, TEES has a close relationship with Texas A&M University, as well as regional divisions at 14 other institutions of higher education in Texas and affiliations with community colleges. Through this statewide network, the agency brings resources together to improve the lives of Texans where they live, work and play.

TEES enhances science, technology, engineering and math (STEM) education in Texas. The agency facilitates the involvement of students in the experience of discovery, which enhances learning and encourages undergraduates to pursue advanced degrees. Educational partnerships across the state work toward ensuring that Texas develops the engineers and scientists that drive the state's technological and economic competitiveness.

TEES has a track record of success upon which to build. The agency currently administers more than 4,000 research projects and more than 2,200 industry partnerships. The majority of the more than \$120 million in external research dollars generated by the agency continues to come from federal sponsors, while research funding from the private sector has remained strong through research centers and consortia that serve a broad range of industries.

TEES is known for its entrepreneurial culture, the relevance of its research activities and its high leverage of state dollars. In FY 2009, TEES leveraged the state investment of general revenue appropriations approximately 16-fold in the short term, a tribute to the quality and relevance of the work and service provided by TEES personnel. In the long term, the research pays a much greater return in benefits to the industry and economy of Texas and the nation.



Photograph by Steve Lyon



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:

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

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.



Securing energy for the future

From biofuels to wind energy, the Energy Engineering Institute was formed in 2009 to harness a broad spectrum of energy research expertise and work collaboratively with energy companies, government research agencies, existing TEES laboratories, members and agencies of The Texas A&M University System, and other energy partners.

Summary of Imperatives & Goals

I. Quality Research Driven by Current Public Needs

- 1.1 Priorities Determined by Important Challenges Facing Texas and the Nation
- 1.2 Research Aligned with Funding Opportunities, External Relevance and Impact upon Technology Development
- 1.3 Strategic Investment of Resources

II. Enhanced Research Capacity Across Texas

- 2.1 Competitive Higher Education Partnerships
- 2.2 Development of Statewide Research Leadership
- 2.3 Launching Junior Faculty Research Activities

III. Robust Science, Engineering, Technology and Math (STEM) Education at All Levels

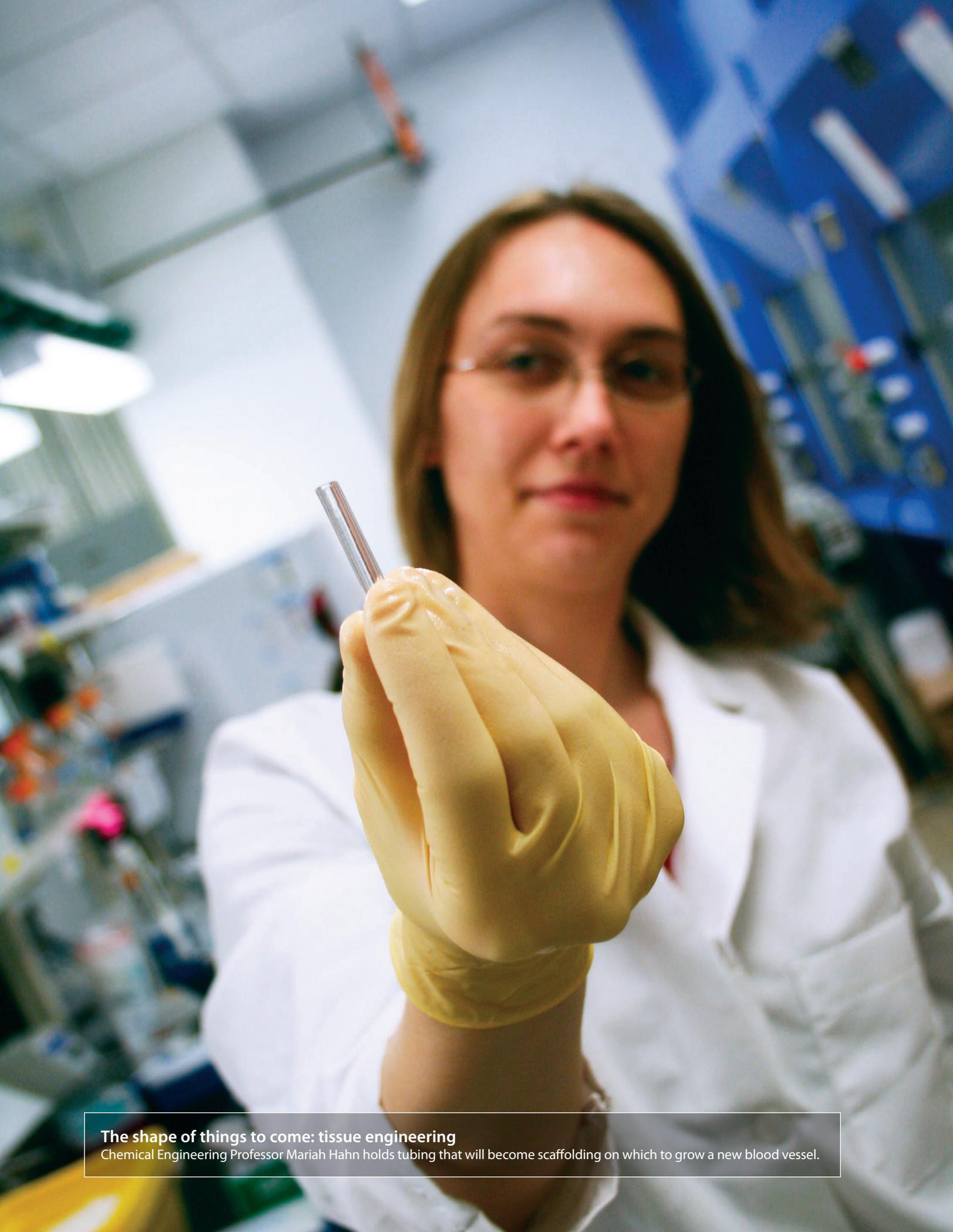
- 3.1 Recruiting the Future Workforce
- 3.2 Engaging Undergraduate and Graduate Students

IV. Economic Development through Technology Transfer

- 4.1 Strengthen the Technology Base of Texas

V. Effective Resource Management

- 5.1 Maintaining and Maximizing Good Stewardship of State Revenues



The shape of things to come: tissue engineering

Chemical Engineering Professor Mariah Hahn holds tubing that will become scaffolding on which to grow a new blood vessel.

Imperative I

Quality Research Driven by Current Public Needs

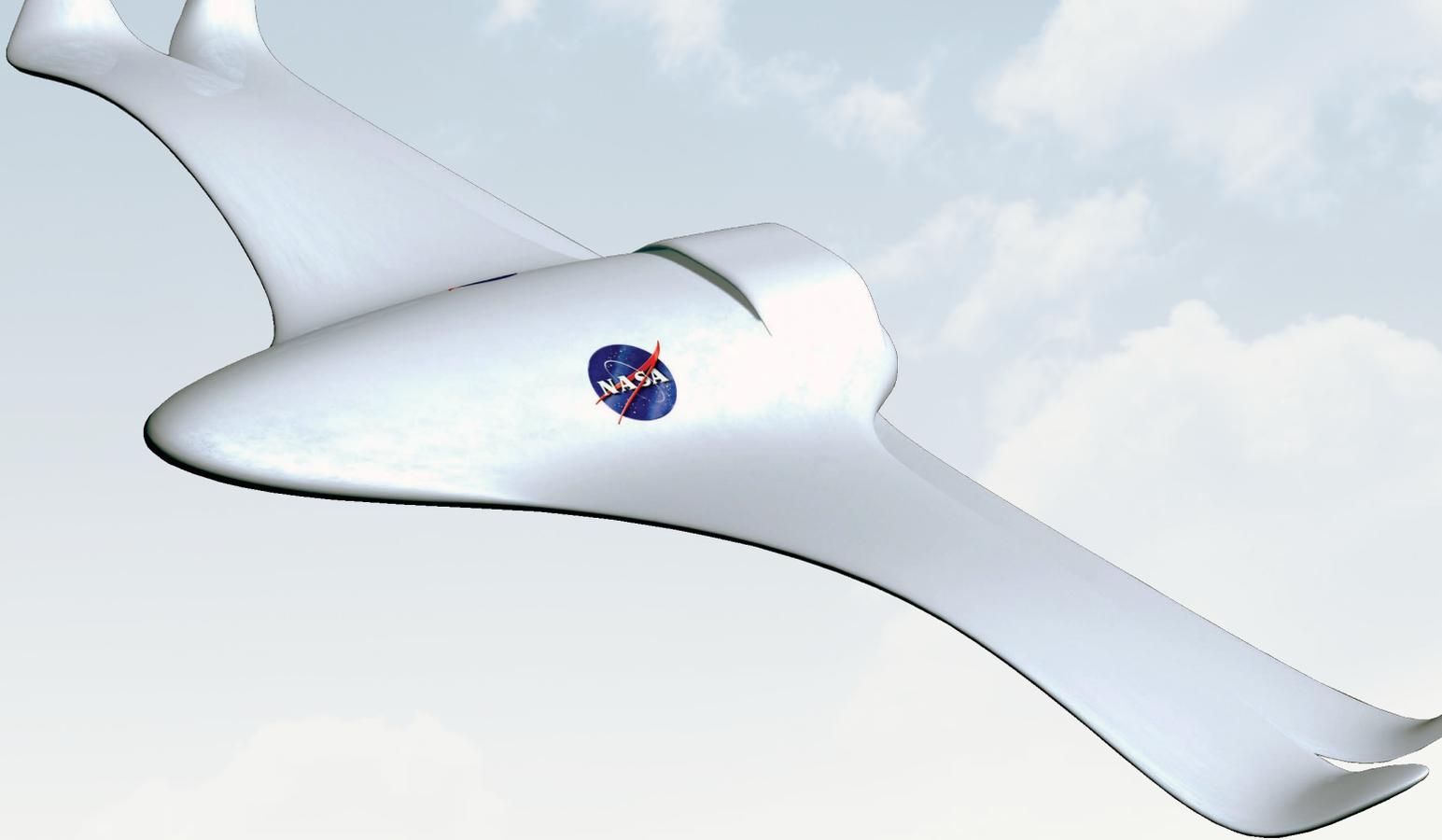
The tremendous advances made as a result of engineering contributions and engineering-related research have left few facets of our everyday lives untouched. In areas as far ranging as manufacturing, energy, transportation, communications, environment and health care, society has reaped the benefits of the fundamental research and study performed by higher education institutions. Technological innovation and research have improved the quality of life in the United States by:

- Developing state-of-the-art technologies to satisfy essential needs,
- Enhancing homeland security,
- Preventing and correcting environmental problems,
- Addressing the challenges of health care, and
- Improving the education of our young people

Morphing mirco-aircraft

John Valasek and Suman Chakravorty are researching morphing aircraft as part of a program to develop intelligent micro-air vehicles that have the ability to change shape while they fly. This research is conducted by the Texas Institute for Intelligent BioNano Materials and Structures for Aerospace Vechilces (TiiMS), a partnership among NASA, The Texas A&M University System and other Texas universities.





Technological innovation and commercialization are crucial to the sustained economic growth of our state and our country. The need for new technology has accelerated from growth of a worldwide economy and the search for solutions to societal problems. The State of Texas is at the forefront of this technology revolution with its strong industry sectors. However, Texas must remain a global leader in the technology economy to remain competitive with other states.

The support structure at TEES encourages a research approach that is atypical of that found in the traditional higher education setting — one that accommodates, to a larger extent, industry and government needs and that is more applications-based. Industrial research consortia, strong external advisory bodies and links to federal and state funding agencies ensure the relevance of TEES research efforts to real-world needs.

Research Goals and Strategies

TEES utilizes a variety of resources in the performance of critical research, including professionals in the traditional engineering disciplines, expertise from other relevant academic fields and specialized centers or institutes. TEES research activities cover the entire spectrum of technology research and development — from basic and applied research, testing and evaluating products and processes, product development and commercialization. In order to maintain a strong research program for the state, TEES provides a quality research environment, attracts and retains highly talented researchers and staff, and uses a systematic process to select new initiatives focused upon interdisciplinary research efforts in areas critical to the state and nation.

A key to future success of TEES activities is the strategic identification of specific research themes that align with global trends, are relevant to external sponsors of research funding, and are inspirational for researchers. The targeted areas must fit within compelling national and state missions and also provide the opportunity for transformational technology development.

I.1 Priorities Determined by Important Challenges Facing Texas and the Nation

- Focus on research in the targeted signature areas of Energy for the Future, Infrastructure, National and Homeland Security, Health Care and Informatics, and Knowledge-Based Economy
- Build upon strengths in critical underlying technologies such as nano-materials, large-scale computation, sensors and controls, and robotics and autonomous systems
- Provide seed funding for research in emerging areas

I.2 Research Aligned with Funding Opportunities, External Relevance and Impact on Technology Development

- Strive for a balanced research funding portfolio
- Strengthen relationships with key federal and state funding agencies targeting the National Science Foundation, National Institutes of Health, Departments of Defense, Homeland Security and Energy, and Intelligence Agencies
- Increase partnerships with industry through hosting industry representatives in research facilities and industry on-site visits
- Disseminate research results through peer-reviewed forums and other avenues

I.3 Strategic Investment of Resources

- Implement targeted campaigns to recruit exceptional researchers in identified thrust areas
- Support top research talent with critical research equipment and laboratories, proposal development and research support services, and increased interactions with federal funding agencies
- Promote and expand utilization of unique facilities such as the Multi-Program Research and Education Facility; Land, Air and Space Robotics Laboratory; National Center for Therapeutics Manufacturing; and Offshore Technology Research Center

Taking oil from water

David Burnett of the Global Petroleum Research Institute works on technology to selectively remove contaminants from water from oil and gas wells to allow water to be reused, avoiding competition with Texas communities and agriculture for fresh water.

Measuring Success

- Sustain the dollar value of external research at the current level each year
- Annually maximize the TEES profile of research funding sources, both federal agencies and industrial sponsors
- Sustain the baseline annual productivity measure of \$408,000 in research awards per full-time TEES researcher
- Develop a systematic review process for assessing the targeted signature research areas by the end of FY 2013 and implement that process by the end of FY 2014
- Demonstrate consistent improvements in increased utilization of the Multi-Program Research and Education Facility
- Increase the extramural funds in the identified strategic research focus areas

Imperative II

Enhanced Research Capacity Across Texas

TEES provides a unique framework for leveraging and focusing human, physical and financial resources in serving its sponsors and the citizens of Texas through research and education collaborations. Known for a unique ability to form strong research and educational partnerships statewide, TEES helps academic institutions develop senior research leadership and enhance junior investigators research capabilities. TEES provides the needed research administration and support for many institutions across the state, opening federal agency doors for many.

The TEES statewide structure allows the agency to draw upon, leverage and strengthen the research resources of Texas. Reiterating observations noted in the Texas Higher Education Coordinating Board plan: “Closing the Gaps” in research, Texas higher education institutions must work together and with other groups to build the state research capacity.

TEES regional divisions are currently in place across Texas at universities within The Texas A&M University System, as well as Angelo State University, Lamar University, Texas State University, Texas Woman’s University, and the University of North Texas. In addition, our two-year college partners include Del Mar College, Brazosport College, Victoria College, Wharton Jr. College, Texas State Technical College, Weatherford College and Lone Star College.

With a reputation for successfully bringing significant research dollars to Texas from federal and private sector sources, TEES strives to extend its expertise statewide to institutions with emerging research agendas by providing proposal development support, research project administration and management, fiscal, compliance and audit support — necessary functions when working with federal contracts. Able to perform as a third-party broker, TEES takes the lead in forming collaborations among four-year institutions and community colleges, especially in the specific areas of interest to federal and state agencies of teacher preparation, workforce development, technician education and advanced technologies.



The Reta and Bill Haynes '46 Coastal Engineering Laboratory is located in the Texas A&M University Research Park, also home to the neighboring multi-institutional Offshore Technology Research Center and worldwide Integrated Ocean Drilling Program headquarters. Together with these two facilities, the Haynes Lab is the only place in the United States to offer complete and complementary facilities and resources for the testing needs of coastal and offshore systems.

Collaboration Goals and Strategies

In order to fulfill the Legislative mandate to promote engineering and technology research, education and technology transfer throughout Texas, TEES has established divisions at other universities that have interests in initiating or strengthening their technological research programs. This network of regional divisions fosters cooperation among state institutions of higher education and forms research partnerships that enhance economic development and educational activities. In addition, these partnerships position the state to compete more effectively for federal dollars.

TEES provides expertise in developing and crafting proposal concepts in the best light for peer-reviewed processes. TEES provides a coordination point for all phases of multi-partner or center-level proposals, including initial strategy, planning, partnership alignment, broader impacts, diversity issues, budgetary assistance in collaboration with TEES Research Services, through proposal development. This coordination is especially necessary to support major center-level proposals submitted through TEES and proposal efforts involving multiple campuses or partners.

2.1 Competitive Higher Education Partnerships

- Link TEES regional divisions and A&M System campuses with funding agency objectives and opportunities
- Build upon funded multi-institutional projects while seeking new funding for research areas of common interest based upon institutional strengths and research capabilities
- Expand collaborations with the A&M System agencies and Health Science Center
- Leverage TEES expertise in proposal development, competitive strategies and contract administration
- Provide comprehensive research administrative support to TEES regional divisions using a state-of-the-art management information system

2.2 Development of Statewide Research Leadership

- Coordinate with the Office of the Vice Chancellor for Research to engage more researchers and students from across the A&M System in research activities
- Communicate research funding opportunities through monthly electronic newsletters to researchers in all TEES divisions, TEES website and portal, and targeted individual emails to researchers
- Promote and utilize the West Texas A&M Office of Evaluation, developed with the assistance of TEES
- Develop new research leaders through foundational education initiatives

2.3 Launching Junior Investigators' Research Activities

- Provide strategic advice and assistance to researchers at partner institutions, including direct interaction with TEES experts on proposal strategies, evaluation information, budgeting strategies and proposal development
- Conduct statewide workshops for junior investigators on federally funded CAREER and Young Investigator Program awards



Measuring Success

- Maintain the number of proposals submitted each year close to the current level
- Continue assisting the regional divisions in the development of their research capabilities
- Sponsor an annual meeting of TEES regional divisions to explore new research collaborations
- Increase the number of workshops, seminars, webinars and face-to-face meetings with researchers to develop strategies for seeking federal funding
- Assist at least 15 junior researchers from the A&M System in submitting CAREER or Young Investigator Program proposals each year

Imperative III

Robust Science, Engineering, Technology and Math (STEM) Education at All Levels

The accelerating pace of industrial and technological developments has created an ever-increasing demand for highly qualified, professional engineers and scientists. Technology has diversified the Texas economy, altered the way in which we live, and allowed information to be more accessible than ever. However, given its large population, Texas presently lags behind most of its key competitor states in the number of engineering and computer science degrees awarded.

Texas must strengthen science, technology, engineering and math (STEM) education at all levels in order to sustain its economic growth and remain competitive in an increasingly global and technology-driven economy. The state must bridge the skills and workforce gaps because employers need workers who possess critical reasoning skills and an understanding of scientific inquiry and mathematical concepts. In addition, Texas should experience substantial growth in the coming decades and the Texas population should become increasingly diverse and mature. Increases in underrepresented group participation is essential at all levels of the engineering profession. Opportunities must be available for recruiting and retaining a diverse student body into higher education and research.

TEES has developed a comprehensive partnership with K-12 schools, community colleges, universities and industry. TEES has brought more than \$80 million in federal funding for math and science education to help support the urgent need to produce more engineers and scientists.

TEES will continue to seek ways and opportunities to provide inclusive and diverse environments in engineering and technology-related programs. This will include the continuation of pre-college programs, increased partnerships with community colleges, modifications in the delivery of engineering curriculum, programs to increase student retention and to encourage graduate studies through applied research experiences, and increased interactions with industry in these areas.



Summer Research Experience for Teachers

Cynthia Epps, teacher at Westside High School in Houston, participated in the four-week summer residential engineering research experience on the Texas A&M University campus. Sponsored by NSF, this integrated math and science program is designed to support student success on the TAKS.

Virtual microscopes for STEM classrooms

Biomedical engineering professor Kenith Meisner developed a virtual microscope in National Instruments' LabVIEW programming environment to meet the needs of secondary STEM education. Texas high school teachers attend the annual STEM Teacher's Summit hosted by Texas A&M Engineering are shown learning how to use the software; each received a free copy of the software for their classrooms statewide.



Educational Program Goals and Strategies

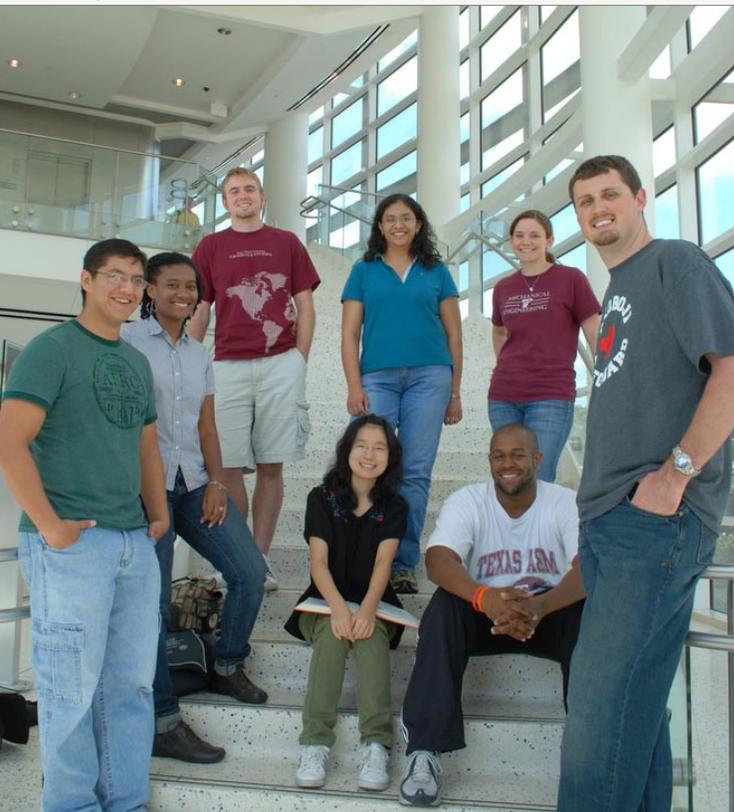
The TEES active research environment contributes to the recruitment of a new generation of engineers. TEES participates in various programs to interest middle-school and high-school students in science, technology, engineering and math, and to support undergraduate and graduate students in obtaining engineering degrees and participating in research programs. Because Texas faces a growing need for diversity among the professionals in engineering and related fields, many of these programs focus upon but are not limited to, underrepresented groups.

Numerous studies, both at the state and national level, report the need for more technology workers to keep Texas and the nation economically competitive. The latest indicators have increased the national focus upon this critical issue. Today the United States is a net importer of high-technology products and lags behind other countries in producing bachelor degrees in engineering, science, mathematics and technology. Exposing public school teachers and students in technology careers is imperative to turn this troublesome tide. Experience has shown that involving students in active learning, such as applied, real-world research projects, is effective in increasing over-all participation and retention in technology fields.

3.1 Recruiting the Future Workforce

- Foster partnerships among K-12, two- and four-year institutions that improve preparedness for STEM degrees
- Expand programs that extend applied research experiences into targeted high schools
- Aggressively pursue external funding for increasing and diversifying student pipelines across Texas institutions (NSF Research Experience for Teachers, STEM scholarships, summer camps, Graduate Teaching Fellows in K-14, etc.)
- Seek opportunities to link developed technology into high school classrooms
- Build upon funded multi-institutional projects aimed at improving K-12 math and science education

3.2 Engaging Undergraduate and Graduate Students



- Link two-year and four-year institutions through funded programs such as Advanced Technology Education awards
- Seek funding and support for NSF Research Experiences for Undergraduates (REU) sites
- Sponsor undergraduate summer research grants
- Provide assistance to the emerging engineering programs across the A&M System
- Extend the Nuclear Power Institute to other institutions in the state to recruit and train the necessary state nuclear power workforce
- Expand and adapt the scope of successful applied research experience programs, such as the Space Engineering Institute, designed to retain students in STEM degree programs and encourage advanced degrees by utilizing “real-world” engineers as mentors



Measuring Success

- Increase the number of undergraduate and graduate students participating in TEES research related activities by 20 percent by the end of FY 2015
- Enroll at least 10 teachers in the Research Experience for Teachers program for FY 2011 and 12 teachers for FY 2012
- Demonstrate leverage in terms of new external funding for system-wide collaboration to strengthen engineering education by end of FY 2011
- Establish at least two partnerships or proposal partnerships with two-year schools each year
- Develop and communicate on the TEES website an annual summation of STEM activities

Imperative IV

Economic Development Through Technology Transfer

Our cutting-edge research generates substantial payoffs. It creates new products and improves lives. It spurs jobs and economic development through the licensing of research discoveries, and sparks start-up companies. It also trains students so they can hit the ground running when they enter the workforce and become the innovators of tomorrow.

TEES must work closely with Texas industry in generating new jobs and economic activity using our established and new partnerships with industry for the development of technologies and intellectual property. Alliances with industry must continue to develop innovative mechanisms to apply new knowledge and to accelerate the transfer of technology from research laboratories into the commercial marketplace.

We work with industry through:

- Sponsorship of research projects
- Licensing and commercialization of research results
- Industrial research consortia
- Assistance with technology insertion
- Testing and evaluation capabilities

Of equal importance are other forms of technology transfer, including publications of innovative advances in engineering and industrial symposia, seminars and workshops. Examples of widely attended industrial events hosted by TEES each year include the Instrumentation Symposium for the Process Industries, International Pump Users Symposium, Turbomachinery Symposium, Conference for Protective Relay Engineers and Industrial Energy Technology Conference.

Specifically, TEES is focusing upon the six Texas target industry clusters identified by the governor's initiative, believed to offer overall economic growth and bring high-paying jobs to Texas. The industry clusters include advanced technologies and manufacturing; aerospace and defense; biotechnology and life sciences; information and computer technology; petroleum refining and chemical products; and energy.



Helping hearts heal: Veterinary surgeon Dave Nelson helps implant a direct cardiac compression device designed by biomedical engineering professor John Criscione into a sheep. The device wards off congestive heart failure by restoring motion to a heart damaged by heart attack.



Saving eyesight with early detection

An off-the-shelf retina camera and software developed by Computer Science and Engineering Professor Steve Liu and other researchers reads the data from the image of a patient's retina as part of the Texas Advance DR detection system, which will aid in the early diagnosis of diabetic retinopathy.

Technology Transfer Goals and Strategies

The outcomes of TEES efforts are positive contributions to the economic, social and quality of life dimensions of Texans and Americans. The partnerships TEES forms with industry and others result in technology-based employment, emerging entrepreneurship and international competitiveness.

Only when the innovations are commercialized and applied can they enhance life and economic growth. Our activities in this area include bringing new technologies to the marketplace and licensing inventions while protecting the state's valuable intellectual property rights. This is accomplished by providing assistance to researchers on intellectual property policies and maintaining a system for evaluating, marketing and promoting TEES research results for commercial application. The transfer of knowledge from the higher education research setting to commercialization relates directly to the state's goals of building a foundation for social and economic prosperity and enhancing the productivity of Texas.

4.1 Strengthen the Technology Base of Texas

- Establish strategic partnerships with industry in interdisciplinary areas of interest
- Actively participate with the state's regional centers of innovation and commercialization and other economic development programs identified by the Governor's Office
- Establish new partnerships with the military bases in Texas
- Work closely with the A&M System Office of Technology Commercialization to promote entrepreneurship and economic development through the transfer of research results to industry for commercial application
- Articulate the economic benefits to the state accruing from TEES activities



Crop to Wheel: Chemical Engineering Professor Mark Holtzapple and Mechanical Engineering Professor Mark Ehsani are developing a remarkably efficient engine and a sustainable source of biofuel made from biomass with the goal of someday being able to drive from Los Angeles to New York City on a single tank of fuel.

Measuring Success

- Form one new industry partnership through the Energy Engineering Institute each year
- Demonstrate consistency over time in the number of inventions or copyrightable works
- Develop and implement a process with the A&M System Office of Technology Commercialization for the careful selection of technologies for which to pursue patent protection

The future National Center for Therapeutics Manufacturing (NCTM), an institute within the Texas Engineering Experiment Station (TEES), will become the international leader and regulatory benchmark for flexible manufacturing technologies applied to biological therapeutics, including monoclonal antibodies, DNA and protein therapeutics, personalized cancer vaccines and infectious disease bioterrorism counter measures. NCTM is part of the Institute for Innovative Therapeutics™ (IIT), created to transform the multiple research centers within The Texas A&M University System into a single, unified biomedical enterprise designed to improve global health through research, development, demonstration and commercialization.



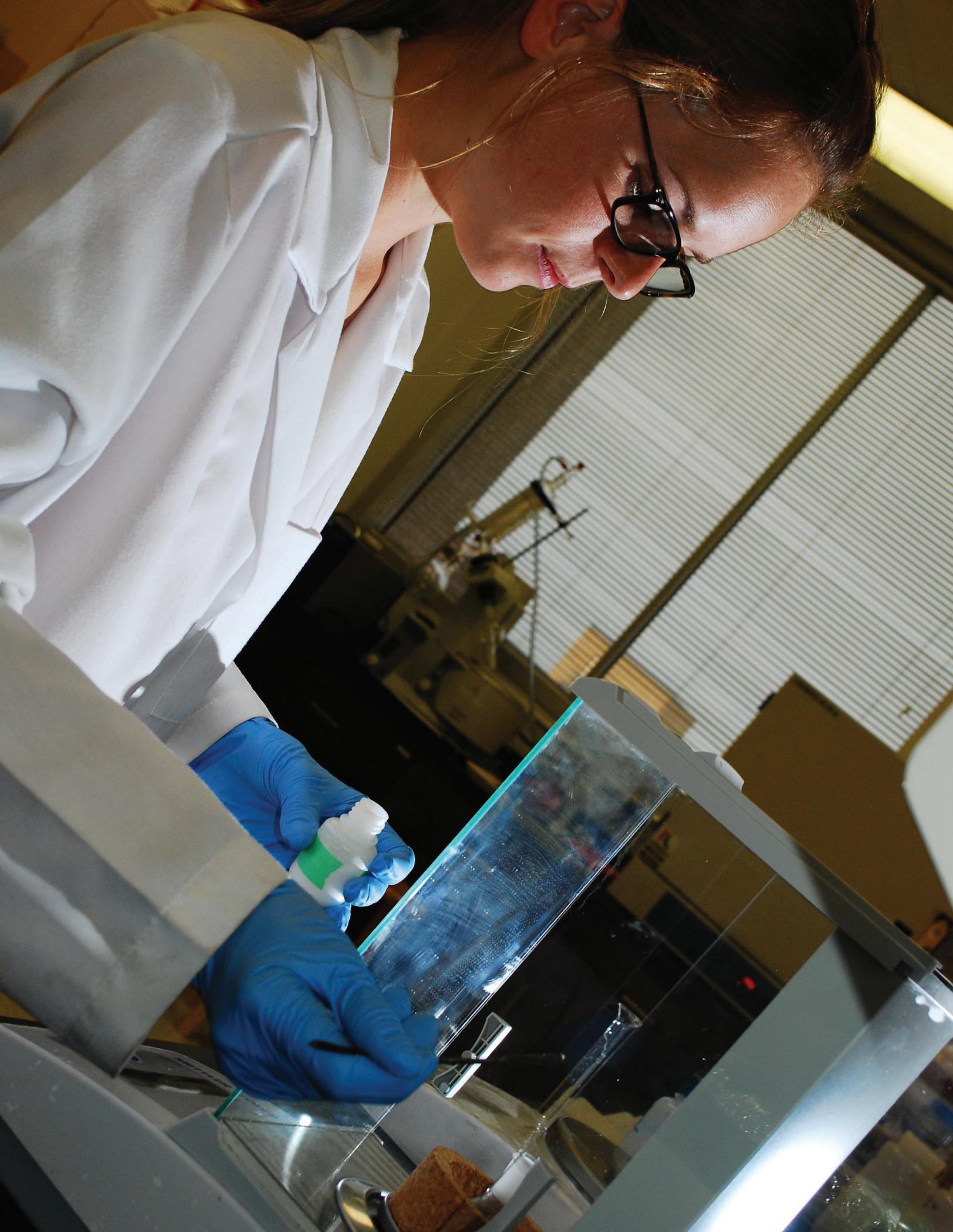
Imperative V

Effective Resource Management

TEES plays an important and unique statewide role in higher education. Through its programs, many Texas citizens and businesses have access to new technology and research that results in a more diversified and competitive state economy, skilled and competitive workforce, and more federal dollars returned to Texas. As a state agency dedicated to serving the public, it is essential that TEES apply the valuable, but limited, resources provided it by the State in an efficient and effective manner using well-designed, deliberate strategies. TEES strives to maximize the general revenue support received from the State by leveraging those funds with external contracts, grants and fees. TEES does this by creating effective partnerships that bring together expertise from across the state to address both problems and opportunities facing the state and nation.

TEES management has been proactive in developing continuous operational efficiency improvement strategies. Streamlined processes have been established, which have played a major role in enabling TEES to manage significantly larger volumes of proposals, contracts and projects with a stable staffing resource level. TEES has improved and implemented a state-of-the-art research management information system, developed rules for compliance with federal, state and A&M System regulations, and automated a number of processes including voucher approval routing and electronic distribution of newsletters and funding opportunities.

TEES must continue to provide diligent stewardship of funds, equipment and physical facilities through improved information systems and performance-based evaluation of allocated funds. TEES actively participates in the A&M System shared services and best practices activities and continually seeks ways to capitalize upon economies of scale to increase efficiencies.



Resource Stewardship Goals and Strategies

In accomplishing its mission, TEES maintains the highest ethical standards, fiscal accountability and integrity. Because TEES is a highly leveraged agency with only eight percent of total funds coming from the State of Texas, customer satisfaction is crucial. TEES has established high standards of customer service and has developed methods for measuring, assessing and assuring that these standards are met.

In efforts to minimize costs while achieving agency goals and objectives, TEES shares services with the engineering agencies, A&M System and Texas A&M University. In addition, TEES provides research contracting services, contract and research federal compliance, proposal development and grant writing services to its statewide regional divisions at partner institutions.

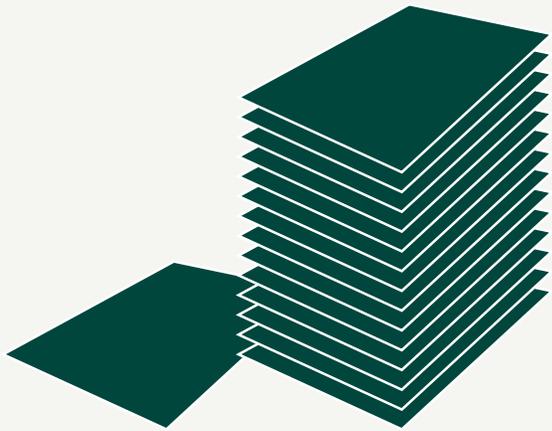
5.1 Maintaining and Maximizing Good Stewardship of State Revenues

- Ensure the best leverage of public funds and the largest return on research investment
- Provide customer-oriented service
- Monitor and evaluate the performance of TEES research centers and institutes for relevance to critical issues and ability to sustain external support
- Work with the A&M System members to maximize efficiencies and minimize duplication of services in business operations and shared service strategies
- Effectively communicate the value of the research enterprise in Texas



Measuring Success

- Maintain a programmatic budget leverage ratio of at least 1:10 each year in terms of state dollars to total funding
- Develop and implement a review process on an annual basis of all programs, centers and institutes to determine if they should continue based upon the following criteria: (1) continue to fit the mission of the agency; (2) address innovative solutions to important problems facing Texas and/or the nation; and, (3) that continued support for the research comes primarily from external sources



TEES **1:16**
RETURN ON
INVESTMENT

For every dollar of programmatic General Revenue funds provided to TEES by the state, TEES yields more than \$16 from other sources.

Leadership Team

Board of Regents

Morris E. Foster
Chairman

James P. Wilson
Vice Chairman

Phil Adams

Richard A. Box

Lupe Fraga

Bill Jones

Jim Schwertner

Gene Stallings

Ida Clement Steen

Hunter Bollman
Student Regent

Chancellor

Dr. Michael D. McKinney

TEES leadership

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Vice Chancellor and Dean of Engineering
Director, Texas Engineering Experiment Station
Harold J. Haynes Dean's Chair Professor

Dr. Kenneth R. Hall
Deputy Director

Dr. N.K. Anand
Associate Agency Director

Mark Smock
Associate Agency Director, Chief Financial Officer

Deena Wallace
Associate Agency Director

Dr. César Malavé
Assistant Director





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