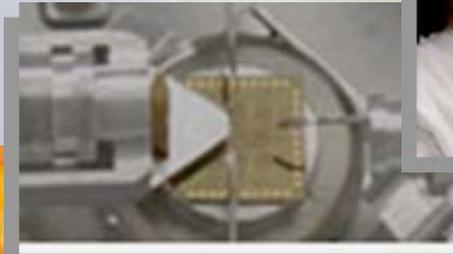
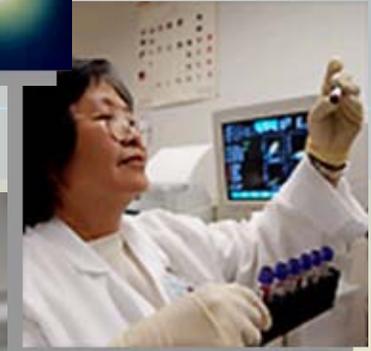


The “Texas Model” for Public – Private Partnerships

Governor’s Industry Cluster Initiative

March, 2007

The Texas Industry Cluster Initiative is all about
“collaboration, cooperation, and being market driven”



This model for partnering defines expectations for all
partners, and drives “just in time” stakeholder collaboration

The Texas Model brings together five key partners to define and implement successful collaboration



Education and Training



Industry



Public Workforce System



Government

Economic Development



Industry Needs

- **Community infrastructure for innovation**
- **Access to intellectual property**
- **Access to talent – students, graduates, full spectrum workforce**
- **Research**
- **Customized training & career development for employees**
- **Responsive partnership to meet changing needs**
- **High “quality of life” community**
 - **Good schools**
 - **Network of resources for innovation**

Industry

Stakeholders

- Employers
- Labor
- Trade Associations
- Industry Foundations

Expectations

- Well-defined requirements for skills and competencies
- Quantified timelines for needs
- Must meet prevailing wage and benefit requirements
- Must be able to sponsor marketing, outreach, and educational efforts with partners
- Must act as the partnership “sponsor”
- Must be willing to intervene and “sell” industry careers to students and incumbent / entry level workers
- Must be able to articulate the business and social values of the partnership to the community
- Must provide management talent and resources to the partnership
- Must support the search for seed capital for outreach and incubation efforts



Workforce & Education Needs

- **Resources for advanced planning responsive to changing industry trends**
- **Identification and definition of talent needs**
- **Support for initiatives that update policy and programs in responsive to skill definitions**
- **Commitment to view talent as an asset not a commodity**
- **Commitment to manage workforce transitions due to cyclical downturns**

Public Workforce System

Stakeholders

- Local Workforce Boards and Contractors
- Oversight and Regulatory Agencies
- State Workforce Investment Council
- Governor's Office and State Leadership

Expectations

- Act as the “convener” of potential partners
- Recommend / implement enabling policies to promote public – private partnerships
- Be positioned to act as a liaison between state and federal programs
- Provide expertise and accuracy in determining current and emerging workforce needs
- Provide seed funding aligned specifically with the aims of public – private partnerships
- Provide policies and competencies that promote alignment through a workforce pipeline management program



Education System

Stakeholders

- **Independent School Districts**
- **STEM Centers**
- **Educational Services Centers**
- **Community Colleges**
- **University Systems**
- **Philanthropic Foundations**
- **Private Career Schools**
- **Adult Education System**

Expectations

- **Customized Skills training**
- **Skills standards**
- **Articulation agreements**
- **Counseling and mentoring**
- **Internet-based training delivery**
- **Statewide training inventories**
- **Cooperative educational programs**
- **ESL training**
- **Entrepreneurship training**
- **Experiential learning opportunities**
- **Career exploration materials and opportunities**
- **Career & Technical partnerships**
- **Professional internships and externships**



Region/Community Needs

- **Presence of employers and universities**
- **Leadership**
- **Quality of life improvements**
- **Partnership with university and community college systems**
- **Tax contributions to develop infrastructure**

Economic Development

Stakeholders

- Texas Economic Development Council
- Local EDC's
- Local and regional Chambers of Commerce
- Investor Community, including angel investors, banks, ETF, RCIC's, TEF, etc.
- Incubators and accelerators
- Foundations
- Corporate economic development

Expectations

- Branding and marketing of the Texas Model
- Regional partnerships
- Asset mapping competencies
- Local strategies and incentives
- Defined regional targets based on community capabilities and programs
- Intra-company mentoring
- "Best practice" based regional growth models
- Seed and growth capital
- Outreach capabilities
- Business development efforts



Government Needs

- **Job growth for citizens**
- **Higher incomes**
- **New companies**
- **Expansion of existing companies**
- **High quality of life to support continued growth**

Government

Stakeholders

- Federal, state, regional, and local governmental agencies
- Federal and state legislative bodies
- Local extra-governmental bodies

Expectations

- Consistent standards for and regulation of target industries
- Marketing strategies and activities that set a context for regional diversity
- Alignment of resources to consistent priorities and targets
- Seed funding to engage regional partners for retention and growth in target sectors
- Short-term sponsorship of demonstration programs



Knowing what partners can expect from each other will lead to faster and more effective partnerships

- Collaborative efforts lead to identifying the needs of all parties more quickly
- Virtual partnerships can gain the advantage of “timeliness ”
- Partnerships can last as long as the need exists
- Collaboration can bring all the partners to the table earlier in the process



- Partnerships can evolve to sustain themselves and meet changing industry needs



The Central Texas Biotechnology Education-to-Employment Model: The Texas Bioscience Institute

Ms Danette E. Toone

www.texasbioscienceinstitute.com

April 19, 2007

Impact of the Health Care Industry



- Temple is home to three hospitals and the Texas A&M University College of Medicine Clinical Campus
- Health Care provides over 15,000 jobs
- Returns \$750M to the annual economy



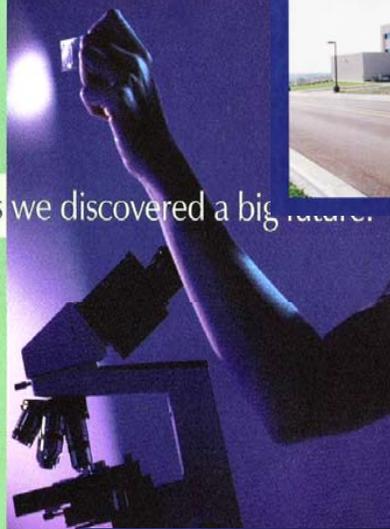
Rapidly Accelerating Commitment to Medical Research



Medical Research Building
Scott & White



While we were studying the little things we discovered a big one.



“The CVRI is an outstanding example of Scott & White, the College of Medicine and the Veterans Administration hospital partnering together to create a whole that is greater than the sum of its parts.”

Dr. Donald J. DiPette,
Director, Division of Molecular Medicine,
Cardiovascular Research Institute



Medical Research Building
Central Texas Veterans Health Care System



Focusing on the Future of Healthcare

Through partnerships with leading institutions like Scott & White, Temple College plays a vital role in educating and training the healthcare leaders of the future. With the new Clinical Simulation Center at the Health Science Center on the Temple College campus, students are learning specialized care by training in a realistic simulation of the hospital setting. With team classrooms, lecture theaters and hands-on training, the Clinical Simulation Center prepares students for a career in medicine. And by partnering with Scott & White - recently named as one of the nation's Top 25 Major Teaching Hospitals - students learn from the best. Temple College and Scott & White - Partnering for success, focusing on the future.

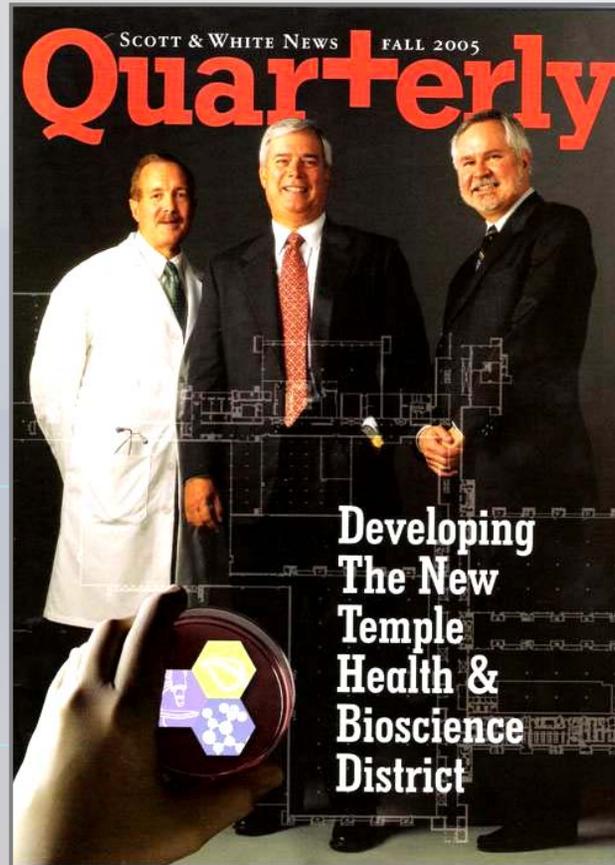


©2008 Temple College. Printed and distributed by
Scott & White Health Services, May 15, 2008

Graduate Medical Education



Thoughtful Planning: Health & Bioscience District / Scott & White Research Campus



Key Components

- **Scott & White Hospital and Clinics**
- **Central Texas Veterans Health Care System**
- **Texas A&M HSC College of Medicine**
- **Cancer Research Institute**
- **Cardiovascular Research Institute**
- **Temple Health and Bioscience District**
- **Temple College**
- **Area School Districts**



Compounding the Challenge

- **National concern over declining postsecondary participation; a parallel concern exists in Texas**
- **State and national concern over the declining postsecondary enrollment in science and math**
- **Texas mandates 4 years of science at the secondary level; however, many school districts cannot deliver the curriculum - T-STEM initiatives are introduced**
- **As medical research expands in Temple, the availability of laboratory technicians to support research remains problematic**
- **Traditional programs such as Medical Laboratory Technology lose viability; Biotechnology emerges as a targeted industry for the State**

Responding to the Need for a Trained Workforce in the Biosciences



Working together to create an Advanced Technology Center is the new vision for the Scott & White Cancer Research Institute and Temple College. This will establish a hands-on training facility for students to become bioscience research workers and give them the opportunity to train with some of the world's most prominent physician-scientists.

Located at the Scott & White West Campus in Temple's Bioscience District, the Advanced Technology Center will allow students to experience the latest in laboratory science technology while helping to create breakthroughs in biotechnology research.

Scott & White and Temple College - partnering for success, focusing on the future.

Creating the future of medicine - together.

Dr. Arthur Frankel, Dr. Wally Dyck, Dr. Janet Duben-Engelkirk, Dr. Chuck McCarter, and Dr. Marc Nigrazzo



www.sw.org 800-792-3710

With support from the healthcare community and a successful Department of Labor grant, Temple College initiated its transition into the Biotechnology arena, simultaneously laying the foundation for the new Texas Bioscience Institute

A Foundation of Exceptional Partners

- **Scott & White Memorial Hospital and Clinics**
- **Central Texas Veterans Health Care System**
- **TAMU System Health Science Center College of Medicine, Temple Campus**
- **Temple Health and Bioscience District**
- **Temple Economic Development Corporation**
- **Region 12 Education Service Center**
- **US Department of Labor**
- **University of Mary Hardin Baylor**
- **Temple College**
- **Central Texas Tech Prep Consortium**
- **City of Temple - Reinvestment Zone 1 Board**
- **Tarleton-Central Texas**
- **Central Texas Workforce Board and Centers**
- **Belton, Temple, Killeen, Salado, Academy, Bartlett, Rogers, Troy and Holland ISDs; Private Schools, including Home Schools**

Recognitions and Awards

- T-STEM “Early Innovator” grant and recognition
- Bayer Foundation STEM K-12 “Best Practices”
- Central Texas Workforce Board
“2006 Exemplary Training Award”
- Texas Workforce Commission “Future Workforce” award to Scott & White
- Bellwether Award Winner in “Workforce Development” category for 2007
- Invited to become a member of the National Center for Biotechnology Workforce
- Selected by Carnegie Institute of Science to send a team to serve on a national Think Tank on Biotechnology Education
- Numerous Presentations: local, state, national



The TBI Umbrella of Programs

Baccalaureate and Beyond

B.S. Clinical Laboratory Science

Apprenticeships (Animal Handling)

A.A., A.A.S. , Advanced Certificates

Middle College (HS Dual Credit)



Flexible Curriculum Options

Degree and Certificate Options in Biotechnology

- **A.A.S. in Biotechnology**
- **Advanced Technical Certificate (ATC)**
- **Enhanced Skills Certificate (ESC)**
- **Apprenticeships**



A.A.S. Biotechnology

- **Associate in Applied Science Degree in Biotechnology (Total of 71-72 hours)**
 - 1st year courses provide foundation in math and the basic sciences
 - 2nd year courses focus on applied biotechnology
 - Internship provides specialized hands-on experience in a laboratory (e.g., medical research)
- Students prepare for work as technicians in medical research laboratories or other biotechnology industries



Advanced Technical Certificate

- Minimum AAS degree or junior level standing in related science field
- Biotechnology program courses from Year 2
- Internship in a research/biotechnology laboratory



Biotechnology Internships

- **Capstone or on-the-job internship in medical research or other biotechnology laboratory**
- **Cooperative effort between college, local medical research investigators, and biotechnology industries**



Enhanced Skills Certificate

- **Enhanced Skills Certificate (ESC) in Genomics/Proteomics**
- **Completion of AAS degree in Biotechnology**
- **Courses in Genetics, Genomics and Proteomics**



Apprenticeship Programs

- **One of the first apprenticeships in biotechnology!**
- **Prepares workers for employment in skilled and specialized biotechnology related occupations**
- **Supervised by an employer-mentor**
- **OJT combined with current, related technical instruction**
- **Our first apprentice working in animal facility!**



Biotechnology Apprenticeships

- **Laboratory Animal Technician I**
- **Laboratory Animal Technician II**
- **Research Technician**

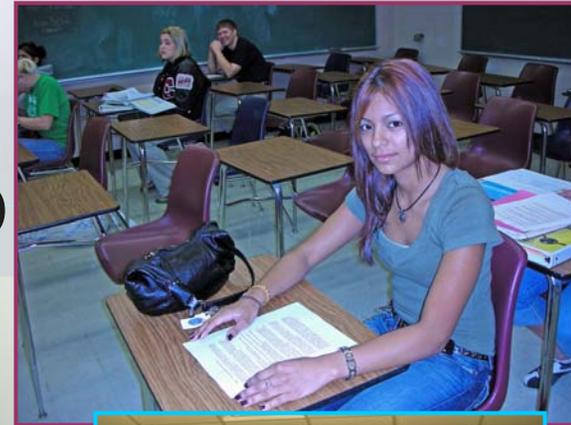


Industry Education Program

- **The Scott & White Program in Clinical Laboratory Science (CLS)**
 - One-year internship for students who have a bachelor's degree in the sciences, or
 - Currently enrolled in an affiliated clinical laboratory science degree program
- **3 + 1 → will receive a bachelor's degree in Medical Technology upon completion of this program**
- **4 + 1 → has a bachelor's degree prior to enrollment in this program**

University Partnerships

- **University On-Site Degree Programs (in progress)**
 - Tarleton Central Texas
 - University of Mary Hardin-Baylor
- **Articulation Agreements (in progress)**
 - Texas A& M University – BIMS 2+2
 - Texas State University
 - University of Houston
 - Scott & White CLS University Affiliations



Student Benefits

- Senior Project
- Job Shadowing
- Community Service
- Graduation Cord
- Friday Tutorials
- Friday Lecture Series
- State-of-the-Art Technology
- Summer Preparatory Institute
- Leave high school with an Associates Degree
- Little or no cost to students or parents
- Letter of Recommendation attached to transcripts for college



Impact and Findings

- **Under-represented population: 86% female; 56% minority**
- **88% of students completed courses**
- **Students earned - 390 College Credits this semester out of approximately 445 taken, an average of approximately 10 credits per student while still full time high school students**
- **The largest amount earned was 18 college credits and the smallest was 3 college credits**
- **Students taking the full 14 credits were more successful than those taking only one or two courses**
- **Juniors were more successful than seniors**
- **Minority students did slightly better than non-minority students**
- **Small school districts and private schools had 100% completion of courses**

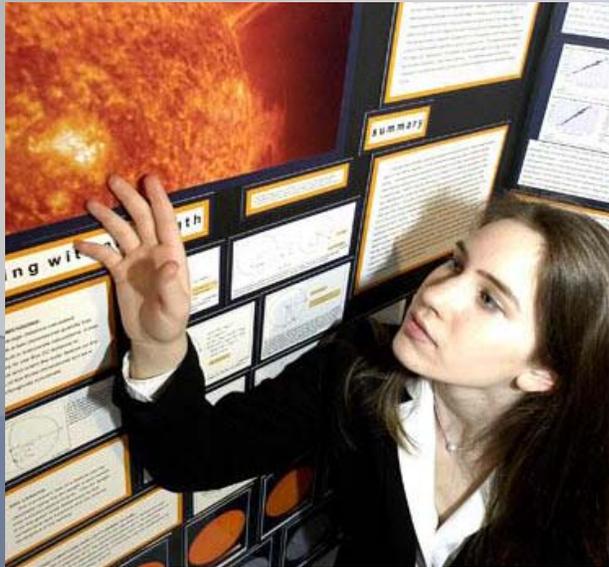
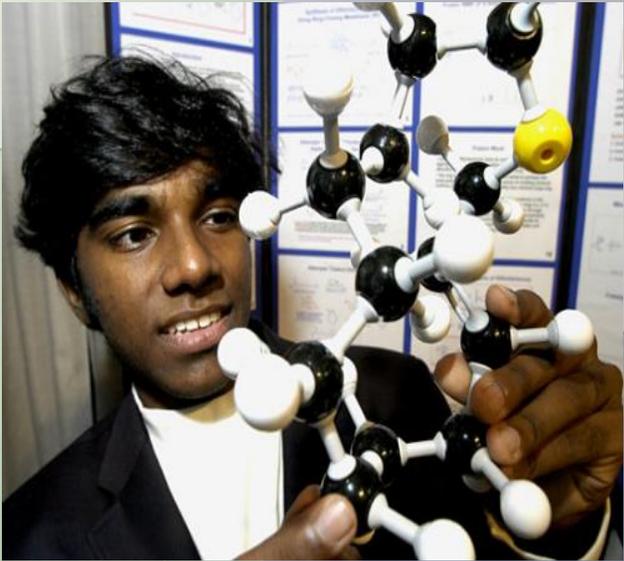
Our Future



Guiding Principles for the Future

- Improve Science, Technology, Engineering and Math education at all levels
- Enable area high schools to offer higher level science and math dual credit courses through the Middle College
- Provide multiple pathways into the biosciences through apprenticeships, specialized certificates, A.A.S. in Biotechnology, and baccalaureate programs offered by university partners
- Enhance community commitment to the bioscience industry as a critical component of economic development
- Promote emerging technology in the biosciences, including the commercialization of research
- Prepare a bioscience workforce for the future





Texas Economic Development Council

Kim Stevenson, vice president,
Enterprise Service Management

Information Technology Industry Crisis

Employers:

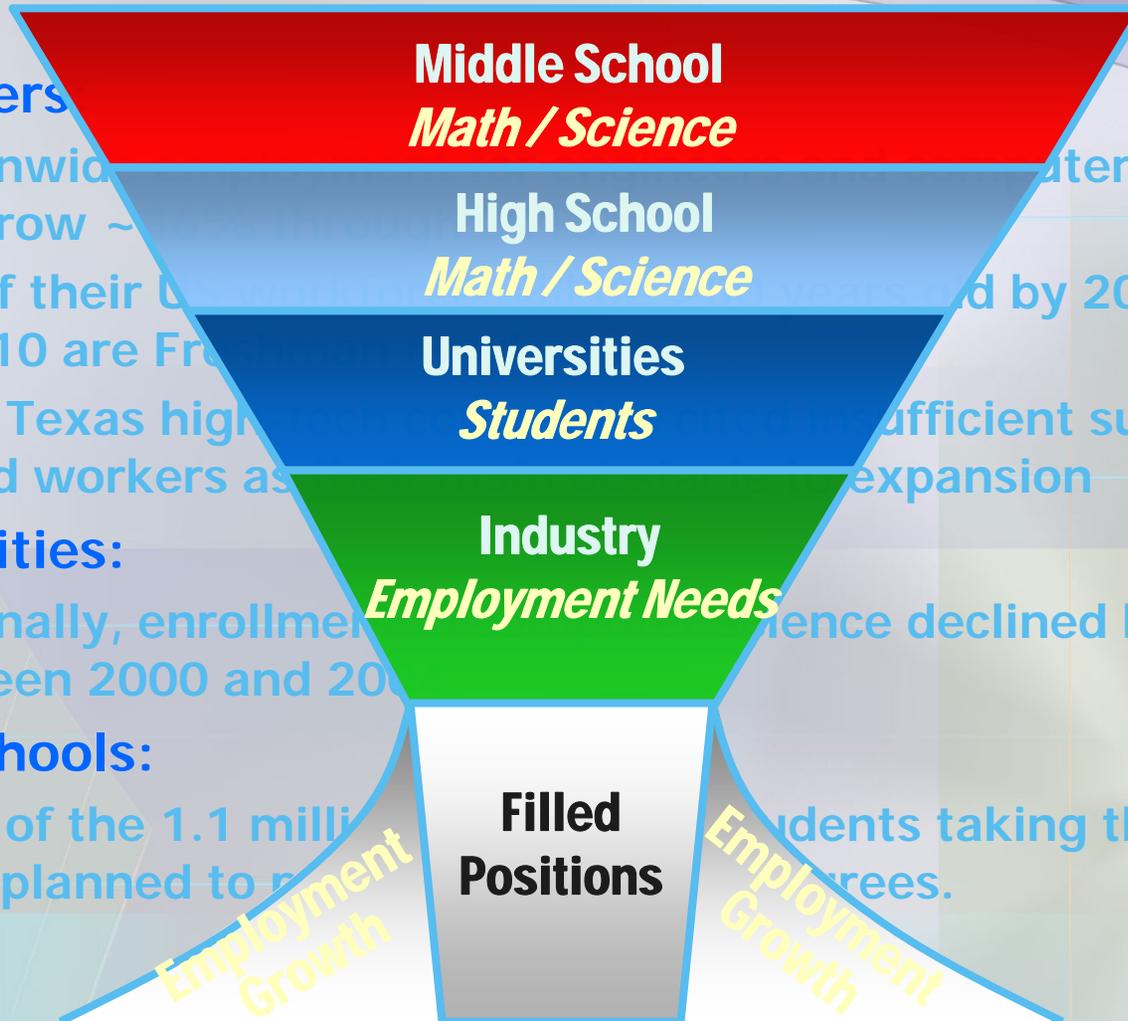
- Nationwide IT employment will grow ~ 10% by 2010; Computer scientists
- 1/3 of their IT workforce will be replaced by 2010; Class of 2010 are from
- ~1/3 Texas high schools do not provide sufficient supply of skilled workers as industry expands

Universities:

- Nationally, enrollment declined by > 60% between 2000 and 2002

High Schools:

- <5% of the 1.1 million students taking the ACT in 2002 planned to major in IT careers.



Sources: Bureau of Labor Statistics, National Science Foundation Higher Education Research Institute, UCLA, 2005, *Maintaining a Strong Engineering Workforce*, ACT policy report, 2003

CIO's Environment

- 59% IT executives say they are inadequately staffed
- Average training required for a new hire tops 2 years
- IT workers cite demanding work conditions as a reason to leave

“Talent is the differentiator between creating significant business advantages with IT, and not.”

*Alastain Behenna, CIO
Harvey Nash Group*

“You’re going to be in trouble if you’re not working to interest kids in IT, recruit them out of university, to develop your own employees and retrain them.”

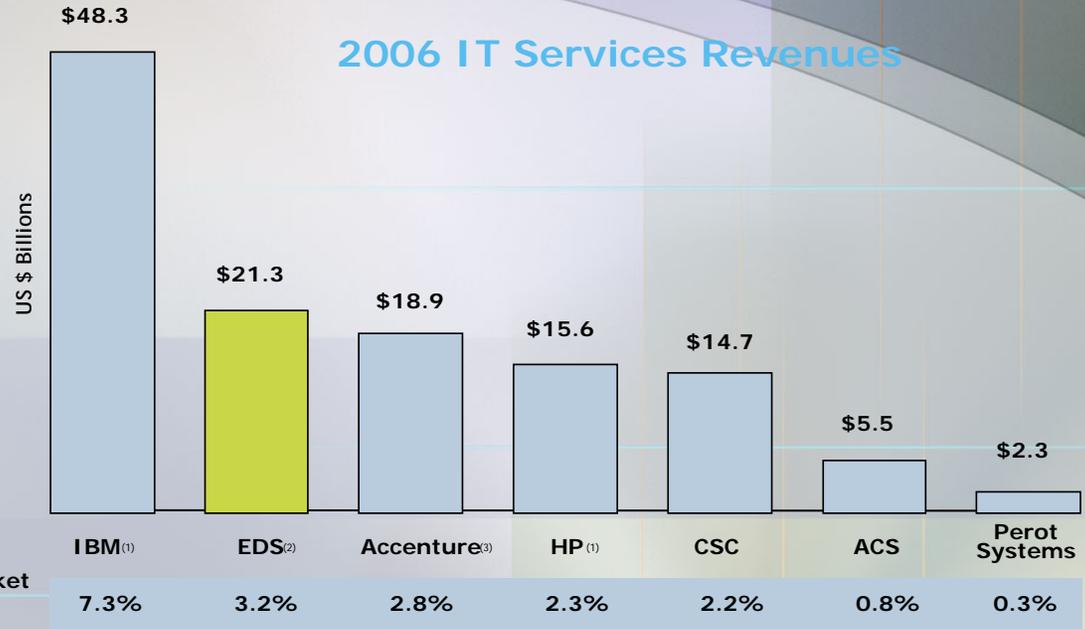
*Ralph Szygenda, CIO & VP
General Motors*

What Does This Mean for Texas?

- Today, the Texas high-tech industry¹:
 - Employs 446,000 Texans
 - Provides a \$30.4 billion payroll
 - Represents 30% of the state's total exports
 - Ranks 2nd in nation in high-tech employees & exports
- Texas ranked third in the nation for undergraduate engineering and computer science degrees awarded in 2004²
- A prosperous Texas depends on a well-educated work force
 - A single year's high school dropouts will cost Texas economy >\$30B over their lifetime in lost wages, taxes³

Texas Leads the Systems Integration Market

- EDS
#2 Global market share
HQ: Plano, Texas
\$21.3B
117,000 Employees
- ACS
HQ: Dallas, Texas
\$5.5B Revenue
58,000 Employees
- Perot Systems
HQ: Plano, Texas
\$2.3B



Note: All values are for calendar year 2006

(1) IBM and HP include Maintenance revenues

(2) EDS values are adjusted for the sale of AT Kearney

(3) ACS values are based on gross revenues for comparison purposes
Source: Gartner, Nov 2006,

Future Growth Expected
(6.4% CAGR)

2006: \$655B



2010: \$856B

Actions:

IT Cluster System Integrator Initiative

- Industry partnering with Universities
- Curriculum changes, internships, faculty interns, industry lectures

Texas Engineering & Technical Consortium (TETC)

- Industry-academic-government increase engineering and computer science grads
- \$16.8M funding from industry, federal and state
- Initiatives: LABS, Internships...

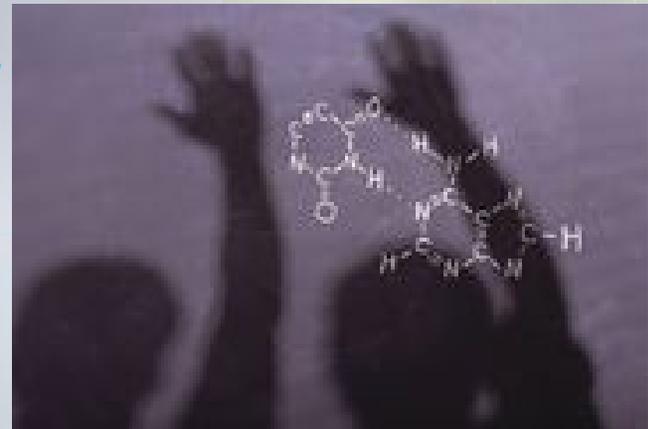
Texas High School Project

- \$261M public/private initiative
- T-stem Academics, centers, best practices

***Theme:* Business, Education and Government all working together to increase the pipeline.**

Texas Economic Growth: *Summary*

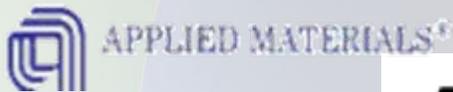
- Texas is well positioned to capture growth in the IT Services Market
- Public, private partnerships are needed to:
 - Build a strong pipeline
 - Change as the IT market changes
 - Establish Texas as a premier state for IT work





TETC

Texas Engineering and Technical Consortium



- Baylor University
- Lamar University
- Midwestern State University
- Prairie View A&M University
- Rice University
- Sam Houston State University
- Southern Methodist University
- St. Mary's University
- Stephen F. Austin State University
- Tarleton State University
- Texas A&M University
- Texas A&M University at Commerce
- Texas A&M University at Corpus Christi
- Texas A&M University at Kingsville
- Texas A&M University at Texarkana
- Texas Southern University
- Texas State University – San Marcos
- Texas Tech University
- Texas Women's University
- University of Houston
- University of Houston Clear Lake
- University of Houston at Downtown
- University of Houston at Victoria
- University of North Texas
- University of Texas at Austin
- University of Texas at Arlington
- University of Texas at Brownsville
- University of Texas at Dallas
- University of Texas at El Paso
- University of Texas at Pan American
- University of Texas at Permian Basin
- University of Texas at San Antonio
- University of Texas at Tyler
- West Texas A&M University

Texas High School Project

Texas Science Technology Engineering and Math Initiative



\$71M in public/private funding to pilot innovative ways to increase the number of students prepared for STEM college and career success

- Increase math/science assessment results & college readiness
- Improve math/science instruction state-wide
- Increase college graduates in STEM fields
- Align high school exit & college entrance standards with STEM subjects



IT Cluster System Integrator Initiative

- **Cluster team is comprised of 25 executive leaders from eight organizations from Industry, Workforce Development and Education**
- **Previous work: Emerging develop fund, technology commercialization at universities**
- **System Integration - Objective:**
 - **Texas companies retain the lead in System Integration market, and capture growth**
- **Actions: Texas A&M University partnership**
 - **Industry-provided lectures**
 - **Industry-led support for women in engineering & computer science**
 - **Developing Student Internship & Faculty Internship Programs**