



HEALTHCARE, BIOMEDICAL, AND AGRI-BIOSCIENCE RESEARCH SERVICES

Temple, Texas, located an hour north of Austin on Interstate 35, is uniquely positioned within Texas and in the US in that it is home to a number of centers for state-of-the-art healthcare services, advanced health education, and cutting edge biomedical and agricultural research. Those entities include:

- **Texas A&M University System Health Science Center College of Medicine**
- **Scott & White Hospital & Clinics**
- **Central Texas Veterans' Health Care Center**
- **King's Daughters Hospital and Clinics**
- **Texas A&M University Blackland Research Center/USDA Research Center**
- **Temple College**

For more than 30 years, these entities have forged innovative public-private, state and federal collaborations in Temple, Texas, yielding several nationally prominent programs and institutes, including:

- Texas A&M Cardiovascular Research Institute
- Scott & White Cancer Research Institute
- Texas Bioscience Institute
- Simulated Training Center for Health Education

By combining both the human health and agri-bioscience components, these partnerships have become a catalyst for future biotechnology development in the Central Texas region. With a population base of over 500,000 and proximity to Austin's technology infrastructure and Ft. Hood, the largest Army installation in the free world, the vision to create a multi-disciplinary Research Park is rapidly becoming a reality. With this vision in mind, Temple leadership engaged Texas State law makers to successfully enact legislation to create **The Temple Health & Bioscience Economic Development District**, the first such entity in the State of Texas.

"My vision for Temple has always been the creation of a center for biotechnology." Dr. George Kozmetsky, founder of Teledyne Corporation, former Dean, Graduate School of Business, The University of Texas at Austin, founder of IC² Institute and "father" of the Austin Technology Incubator.

Texas A&M University Health Science Center College of Medicine

Instituted in 1971, the TAMU College of Medicine was designed to provide all preclinical education (years I and II) on the main University campus in College Station. All 3rd and 4th year medical students then moved from College Station to Temple to complete their clinical education in a unique partnership with Scott & White Memorial Hospital & Clinic, the Central Texas Veterans Health Care facility in Temple and Darnell Army Community Hospital in Killeen. In 2006, the A&M Board of Regents, recognizing the rapid expansion of basic science research and education capabilities in Temple, elected to create a full 4 year medical school campus in Temple in concert with its Temple partners.

- In 1991, the Texas A&M University System Board of Regents approved a restructuring of the College of Medicine as a Health Science Center.
- This change emphasized a broad-based instruction in the medical sciences producing physicians with the knowledge, expertise and vision to meet the challenges facing modern medicine.
- In 2000, a new \$12 million Texas A&M research facility was completed on the Scott & White campus.
- In 2002, an \$11 million combined health education conference center and medical science library was dedicated on the Scott & White campus.



- In 2003, a new \$14 million research facility was completed on the campus of the Central Texas Veterans Health Care Center in Temple.
- TAMU's relationship with Scott & White and the Central Texas Veterans Health Care Center was expanded dramatically in 2006 by a decision of the Board of Regents of the Texas A&M University System to create a full 4 year medical school campus in Temple, beginning with the incoming first year class in the fall of 2007.
- A new Texas A&M Medical Science building, to accommodate progressively enlarging 1st and 2nd year classes and expanded research programs, is presently being planned for the Scott & White Temple campus.

www.tamushsc.tamu.edu

Scott & White Memorial Hospital and Clinic

www.sw.org

Founded in 1906, Scott & White is a world-renowned, multi-specialty hospital and clinic that also serves as the primary clinical teaching site for Texas A&M University Health Science Center College of Medicine.

- Scott & White employs almost 7,000 people and is the largest private sector employer in the Temple-Killeen MSA and one of the largest and most successful fully integrated health care systems in the nation.
- On the Temple campus alone there are some 725 faculty physician/scientists, over 325 resident & fellow physicians in 27 specialty and sub-specialty training programs and some 220 medical students.
- In addition to the main hospital and clinic in Temple, Scott & White has 19 regional clinics scattered throughout Central Texas and has its own Health Plan with over 200,000 members.
- Scott & White has had a long-standing commitment to medical research, beginning with founder, Dr. Arthur C. Scott, Sr. who pioneered the surgical treatment of cancer and was instrumental in establishing Scott & White as the first cancer center in Texas in 1933.
- Scott & White's research division was formally established in 1952 when Dr. Nicholas Hightower came to Temple from the famed Mayo Clinic.
- Currently, the research division conducts research in a wide variety of clinical and basic science disciplines.
- Recently completed projects include:
 - an \$11 million medical library/education conference center funded jointly with Texas A&M.
 - a \$25 million, 78,000 square foot Scott & White "Pavilion" which houses the Eye Institute, the Center for Pain Management, and Scott & White's Out-Patient Surgery Division.
 - a \$138 million, state-of-the-art acute care hospital in Temple.
 - a 50 bed long-term, acute care (LTAC) hospital on the Scott & White Temple west campus.
 - a 72 bed full service hospital and clinic in Round Rock, Texas.

Central Texas Veterans' Health Care Center (CTVHCC)

In 1995, three Central Texas VA Centers were merged into the present consolidated health care system. The Olin E. Teague Veterans' Center in Temple cares for the majority of general medicine and surgery patients. Other centers are in Waco, Marlin, and an out-patient center is in Austin.

The Central Texas Veterans Health Care System is the largest VA medical consortium in Texas and 4th largest in the US, with 10,000+ in-patients and 615,000 (FY2002) out-patient visits annually. In a 1997 JCAHO survey, the CTVHCS received accreditation with commendation which places it in the top 9% of all hospital and health care organizations in the US.

The VA Center in Temple:

- Supports research in the fields of Neuropsychiatry (Schizophrenia, Depression and Alzheimer's Disease) and Cardiovascular research.
- Cares for the majority of general medicine and surgery patients within the CTHCC System.
- Employs 2,800 healthcare professionals and service providers, physicians and researchers and has hundreds of community volunteers.



- Is located on 185 acres about 1 mile from Scott & White Memorial Hospital.
- Has a 300+ bed acute care hospital, a 408-bed domiciliary and 120-bed nursing home care unit (\$50+M projects), with a total of 70 buildings on the campus, including medical education and research facilities.
- Is closely affiliated with the Texas A&M University System Health Science Center/College of Medicine and, together with Scott & White, provides the clinical training for 3rd and 4th year medical students.
- Participates in TAMU-Scott & White residency training programs in general surgery, orthopedics, internal medicine, radiology, urology, ophthalmology, anesthesiology, and in fellowships in medical sub-specialties.
- Administers its own dental residency program and its own APA accredited psychology internship, maintains a mental hygiene clinic, and specialized programs in substance abuse and post-traumatic stress disorder.

King's Daughters Hospital (KDH) and Clinics

Established over 100 years ago, King's Daughters Hospital has some 100 physicians representing 20+ medical specialties. Additionally, it employs almost 500 nurses, support staff and technicians. King's Daughters provides in-patient and out-patient surgical services, a critical care unit, 24-hour emergency department, maternal/child care, and a full range of diagnostic and therapeutic services.

A separate entity, the King's Daughters Clinics have 2 locations in Temple, and additional sites in Belton, Rockdale and Killeen. About 30 physicians in 20 specialties with a nursing and support staff of 265 provide caring medical services to Central Texas residents and their families in these clinics.

Texas A&M University Blackland Research Center (BRC)/USDA Research Center

BRC was created in 1909 as part of the Texas Agriculture Experiment Station (TAES), a state agriculture agency affiliated with Texas A&M University System (TAMUS) on 550 acres of *blackland prairie* in southeast Temple.

- It is one of 13 off-campus research and extension centers designed to improve regional water and soil quality by conducting research and developing new technologies and methods for farmers and ranchers across Texas and around the world.
- Scientists at Temple's BRC also assess the economic and environmental impacts of agricultural research.
- BRC enhances regional educational resources by connecting schools and cities via an interactive videoconferencing network (BellNET).
- Since 1927, BRC has collaborated with the Grassland, Soil and Water Research Laboratory (GSWRL) of USDA/Agricultural Research Service (ARS).
- GSWRL has 2 major units: Natural Resources Systems Research Unit and Grassland Protection Research Unit.
- Scientists from the National Resources Conservation Service (NRCS) and the Texas State Soil Water Conservation Board (TSSWCB) are also located at BRC's facilities.
- Research programs include:
 - *Agricultural Economics* - Economic and biophysical computer models investigate economic impacts and environmental issues related to water quality management, animal wastes, and adoption of conservation tillage.
 - *Agricultural Meteorology* - Measures fluxes of energy and mass from croplands and rangelands throughout Texas.



- *Agronomy and Crop Physiology* - Utilizes field studies and biophysical models to identify genetic and management constraints to dryland cropping systems and develops cultural practices to improve agricultural production and profitability.
- *Characterization and Assessment Applications* - Develops spatial information systems (GIS) for agriculture and natural resources management in Texas, Africa, Central Asia and Latin America.
- *Hydrologic Modeling.*
- *Soil Pesticide Screening.*
- *Water Quality Program.*
- *Integrated Information Management Laboratory (IIML).*
- Research programs from both agencies are closely linked, and scientists are able to capitalize on the strengths of each other utilizing shared resources, offices and labs. Resources include:
 - 25 UNIX-based workstations and 150 computers.
 - \$4 million, 12,000 square feet BRC office building completed in 1999.
 - GSWRL has 25,000 square feet, and annual budget of \$3 million.
 - 100 full-time employees and scientists, plus graduate students from TAMU and other universities and visiting scientists from universities and countries around the world.

www.brc.tamus.edu

Research programs include:

National Agriculture Policy Analysis
 National Soil Database Development
 African Soil & Water Weather Database
 Water Quality Software Development
 Lower Colorado River Graphic Info. System
 Modeling of Mexican Sugarcane Production
 Integrated Information Management
 USDA Water Quality Projects

Software Training Manuals
 Natural Resources Information Technology
 Water Quality Monitoring
 Herbicide Losses
 Cotton Drought Tolerance
 Rangeland Water Use
 CO2 Climate Change
 Research Opportunities for Teachers

Cardiovascular Research Institute (CVRI)

- Authorized by the Texas A&M Board of Regents in 1998, the CVRI is an innovative public-private partnership between Texas A&M College of Medicine in Temple, Scott & White Hospital and the Central Texas Veterans' Health Care Center.
- The purpose of the CVRI is to bring together Basic scientists, clinician/scientists and cardiovascular practitioners to address fundamental and clinical problems associated with the heart and circulation. Dr. Harris Granger, Distinguished Professor and Head of the Dept. of Systems Biology and Translational Medicine is Director of the Institute and Dr. Kenneth Baker, the Frank Mayborn Endowed Chair of Cardiovascular Research, is Director of the CVRI Division of Molecular Cardiology. Both men and their research programs are housed in the College of Medicine on the Temple campus. Other components of the CVRI include the Division of Vascular Biology, the Division of Molecular Medicine and the Division of Lymphatic Biology.
- Currently CVRI research scientists occupy about 30,000 square feet of laboratory space on the Temple campus and about 12,000 square feet in College Station.



Cancer Research Institute (CRI)

- In 2004 Dr. Arthur Frankel and his team of researchers were recruited from Wake Forest University School of Medicine to join Scott & White and the A&M College of Medicine. To accommodate Dr. Frankel's team, Scott & White constructed the Cancer Research Institute on its West Campus in Temple.
- For Central Texas patients, the Institute means ready access to second opinions and innovative treatments for some of the world's deadliest diseases. For the academic world, the Institute represents a true partnership between research and patient care.
- By working closely with pharmaceutical companies from the US and abroad, entrepreneurs and the Food and Drug Administration, the CRI team hopes to bring new therapeutics from molecular design to patient care in less than half the traditional time required.
- Drugs currently being studied include potential treatments for melanoma, leukemia, brain tumors, lung cancer and prostate cancer.

Texas Bioscience Institute (TBI)

The Texas Bioscience Institute is a collaboration of many community partners working together to create a state-of-the-art institute to prepare students to enter the rapidly evolving bioscience medical industry.

- Creation of the bioscience institute was spurred by a nearly \$1 million grant to Temple College in 2005 from the US Department of Labor.
- Major partners with Temple College in the project include Scott & White, Texas A&M HSC College of Medicine, Temple Health & Bioscience Economic Development District, City of Temple and a number of Central Texas school districts.
- Offers classes for high school students through the Middle College program as well as a two-year program leading to an applied science degree, advanced certificates and apprenticeship programs for traditional and non-traditional college students.
- 27,000 square feet state-of-the-art classroom and laboratory facility located on Scott & White's West Campus alongside world-class medical research and bioscience commercial laboratories.
- Middle College program recognized on the national level as one of the 'Best Practice' STEM Education Programs.
- Showcased at the STEM Education Diversity Forum in Washington, DC.
- Winner of the 2006 national Bellwether Award as the most innovative program linking a Community College with public and/or private entities in Workforce Development.

Clinical Simulation Center (CSC)

The Clinical Simulation Center (CSC), located in the Temple College Health Sciences building, is a collaborative initiative of Temple College, Scott & White Memorial Hospital and Texas A&M Health Science Center

- Mission of CSC is to enhance patient safety and quality of care through use of clinical simulation in education and research.
- Used for training medical students, nursing students, medical residents and fellows and other health-related care givers.
- Partnership with Laerdal International allows acquisition of the latest, most sophisticated simulators available in the world.
- Recognized as one of the finest and most sophisticated CSC's in the country.



Temple Health & Bioscience Economic Development District (THBEDD)

The THBEDD is devoted to the development and creation of health and bioscience/biotechnology opportunities within the City of Temple.

- Created as a result of legislation passed by the State of Texas in 2003 and approved by the Temple voters.
- First such district created in Texas.
- District is eligible to receive Federal, State or private grants as well as monetary gifts from collaboration with other organizations.
- District has played a pivotal role in the majority of positive events related to Temple's bioscience initiatives since its inception in 2003.

Temple Research Campus

Temple's newest asset to facilitate advances in biotechnology, nanotechnology, medical and agri-bioscience research, medical device manufacturing and education is the former Texas Instruments facility. The 500,000 square feet modular building with the adjoining 503 acres located just west of Interstate 35 was acquired by the city of Temple in March 2002. Initiated by a proposal from Temple Economic Development Corporation, the city recognized the tremendous opportunity that such a facility could bring to the entire Central Texas region combined with the state's efforts to attract new biotech and medical related projects to Texas.

- The 500,000 square feet building is already home to the Scott & White Cancer Research Institute and the Texas Bioscience Institute. Additional research programs are planned for that facility.
- Incubator space available to prospective clients.
- 300 acres of the 500 acres, located in a scenic setting, are being developed as a Bioscience Campus to accommodate prospective Biotechnology clients.
- With such an outstanding physical asset, Temple's existing medical and research partnerships anticipate attracting new partners in research and programs that will improve the quality of healthcare and quality of life, and do it in a lower cost environment, but within easy access to each of the Texas metro areas (Dallas, Austin, Houston and San Antonio.)

Other Educational Resources

The Central Texas region has over 35,000 undergraduate students and graduate 8,000 annually.

- **Temple College:** A 2-year accredited school with 3,330 students, TC offers an Associates of Applied Science Degrees in the following medical and research-related fields:
 - Emergency Medical Services Medical Laboratory Technology
 - Nursing Vocational Nursing
 - Respiratory Care Surgical Technology
- **University of Mary Hardin Baylor:** a 4-year university with 2,800 students in nearby Belton offers Bachelor of Science degrees in the following disciplines: Nursing, Biology, Chemistry, Computer Science, Information Systems, and Medical Technology. UMHB also offers a Master of Health Science Management degree as part of its master's program.
- Within 40 miles, there are 5 additional colleges and universities including Baylor University, Texas State Technical College, Central Texas College, Tarleton State University/Central Texas, and McLennan Community College.
- Within 80 miles there are 7 more colleges and universities, with over 150,000 students and 25,000 annual graduates. These include The University of Texas, Austin and Texas A&M University, College Station.