UTSA.

The University of Texas at San Antonio
Office of Research

STRATEGIC PLAN

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MISSION

The UTSA Office of Research fosters an innovation ecosystem that is accelerating transdisciplinary research and economic development through creative discovery by producing responsible and transformative outcomes to benefit our communities.

VISION

To be a Hispanic thriving research institution with global impact.

Elevating the Research Enterprise

UTSA is committed to growing the institution's research and economic development enterprise through several strategic goals and pathways, and by investing resources into five key research pillars.

Research Strategic Goals

ENHANCE RESEARCH REPUTATION

Expand UTSA's national and international research profile and rankings.

BROADEN RESEARCH IMPACT

Address global challenges and societal issues through interdisciplinary research.

FOSTER INNOVATION AND ECONOMIC DEVELOPMENT

Drive economic growth and create jobs through research and innovation.

DEVELOP HUMAN CAPITAL

Invest in faculty, staff, and students to support research excellence.

Research Pillars of Excellence

DIGITAL ECONOMY

AI & Machine Learning | Cloud & Edge Computing | Cyber Security | Data Science & Analytics | NexGen Wireless and Quantum

HUMAN HEALTH

Bioregeneration | Brain Health & Neuroengieering | Health Disparities | Human Performance | Infectious Disease | Precision Therapeutics

SOCIAL-ECONOMIC TRANSFORMATION

Career-Engaged Education | Entrepreneurship | Human Development | Justice | Socio and Economic Equity

FUNDAMENTAL FUTURES

Environmental Change | Earth & Space Sciences | Energy & Manufacturing | National Security & Defense | Smart Infrastructure

CULTURE AND INCLUSION

Arts and Digital Humanities | Cultural Sustainability | Disability Studies | Language & Literacy | Race and Ethnic Studies| Women and Gender Studies

The Eight Pathways to Achieve Goals

Through a series of pathways, UTSA will significantly contribute to the institution's research productivity and our region's economic growth. These eight pathways are:

1 HUMAN CAPITAL DEVELOPMENT
Invest in faculty and staff.

2 STUDENTS AND POSTDOCTORAL SCHOLARS
Support graduate student success and postdoctoral research.

3 OUTREACH AND ENGAGEMENT
Build partnerships with industry, government, and community.

4 RESEARCH INFRASTRUCTURE
Enhance research facilities and technology.

5 TRANSFORMATIVE RESEARCH PROGRAMS
Secure funding for groundbreaking research.

6 INNOVATION AND ECONOMIC DEVELOPMENT
Foster innovation and commercialization.

7 GLOBAL REACH
Expand international collaborations.

8 SCHOLARLY EXCELLENCE
Recognize and reward faculty achievement.

Supporting Framework

Through a number of research entities and resources, including research centers and institutes, Research Interest Groups (RIGS), cluster hiring programs and core labs, UTSA provides specialized equipment, facilities, administrative support and unique interdisciplinary and industry collaboration opportunities to UTSA researchers to obtain funding and innovate in core areas. These areas are including but not limited to:

- AI
- brain health
- climate studies
- cloud computing
- cybersecure manufacturing
- national security
- quantum

Upcoming Initiatives

COLLEGE OF AI

A new college of AI, cybersecurity, computing, data science and related disciplines is planned to open and will provide additional support to researchers through expanded facilities, programs and partnerships, and by attracting additional talent in these fields.

SPACE RESEARCH CENTER

A new research center opening in the 2024-2025 academic year will provide enhanced support and opportunities to researchers and innovators in space engineering, technology, and operations in cislunar space.

Collaborations and Partnerships

Several initiatives and structures are in place to foster cooperative efforts among faculty across disciplines:

RESEARCH INTEREST GROUPS (RIGS)

These groups bring together faculty from diverse fields to collaborate on specific research topics, promoting cross-disciplinary knowledge exchange and joint projects.

TRANSDISCIPLINARY CENTERS AND INSTITUTES

UTSA has established various centers and institutes that facilitate interdisciplinary research, providing a platform for faculty from different disciplines to work together.

COLLABORATIVE RESEARCH GRANTS

The institution encourages faculty to apply for collaborative research grants, which often require interdisciplinary teams to address complex problems.

SHARED FACILITIES AND RESOURCES

UTSA provides shared research facilities and resources, such as core laboratories and high-performance computing labs, to encourage collaboration and resource sharing.

Partnerships with Texas Institutions & Other Entities

UTSA actively collaborates with other Texas institutions and external entities to enhance its research capabilities and impact. Some key partnerships include:

- **The University of Texas System (UT System):** UTSA collaborates with other UT System institutions on various research projects, leveraging shared expertise and resources. For example, UTSA researchers are partnering with researchers from UT Tyler and UT Health San Antonio on a project leveraging AI to improve trauma care with funding from the UT System's Trauma Research and Combat Casualty Care Collaborative (TRC4).

- **Texas A&M University System:** UTSA has partnered with Texas A&M on specific research initiatives. For example, UTSA partners with Texas A&M University to co-lead SECURE Southwest, one of five new regional centers being launched to strengthen U.S. research security.

- **Local, State, and Federal Agencies:** UTSA partners with government agencies to address regional and national challenges, such as cybersecurity, energy, and environmental sustainability.

By fostering interdisciplinary collaboration and strategic partnerships, UTSA aims to strengthen its research enterprise, enhance its impact, and position itself as a leading research institution in Texas and beyond.

Economic Impact

UTSA is committed to understanding and improving the economic impact of its research. UTSA has identified the following strategies to optimize its economic impact over a ten-year period:

STRATEGY 1
Secure anchor contracts for areas of research excellence and centers/institutes.

STRATEGY 2
Formalize a regional consortium for competitiveness and nimbleness on economic development and innovation.

STRATEGY 3
Grow the commercialization and industry engagement ecosystem to increase success.

STRATEGY 4
Grow the entrepreneurial and innovative leadership workforce through student and faculty training.

In addition to these strategic focus areas, UTSA also focuses on the following activities to make sustained, positive economic impact on the region and the State of Texas:

- **Economic Impact Analysis:** UTSA regularly measures its economic impact by multiple metrics. In May 2024, UTSA joined the Institute for Research on Innovation and Science (IRIS), a consortium of America's leading higher education institutions that provides data to demonstrate the public value of sponsored scientific research. These data focus on the economic impacts of research, including job creation. UTSA's Valdez Institute for Economic Development also conducts regular economic impact analyses to quantify the direct and indirect contributions of its research activities to the regional and state economy and produces an annual report detailing metrics such as job creation, new business formation, and increased tax revenue.

- **Industry Partnerships and Commercialization:** By fostering strong partnerships with local and regional industries, UTSA aims to translate research findings into practical applications that drive economic growth. This includes supporting entrepreneurship, technology transfer, and commercialization of intellectual property.

- **Workforce Development:** UTSA is dedicated to developing a skilled workforce that can meet the needs of the 21st-century economy. Through its academic programs, research initiatives, and partnerships with industry, the university is helping to create a pipeline of talented individuals who can contribute to regional economic development.

- **Data-Driven Decision Making:** UTSA will utilize data analytics to identify opportunities for economic impact and measure the effectiveness of its initiatives. By leveraging data, the university can make informed decisions and optimize its resources to maximize its economic contribution.

- **Job Creation:** UTSA employs a large workforce and supports numerous jobs in the region's education, healthcare, and technology sectors.

- **Research Funding:** The university attracts significant research funding, which stimulates local economic activity and supports innovation.

- **Student Spending:** Students contribute to the local economy through their spending on housing, food, and entertainment.

- **Community Engagement:** The university is actively involved in community outreach and engagement, supporting local organizations and initiatives. For example, in 2023, the Valdez Insitute for Economic Development served over 40,000 clients, facilitated 545 new business starts, supported 900 expansions and helped secure over $200 million in new financing and investment. These and other institute efforts generated $2.6 billion in direct economic impact in 2023.

Local and Regional Economic Priorities

UTSA recognizes the importance of aligning its research efforts with the specific needs and priorities of the San Antonio region and the state of Texas. The university is committed to addressing local challenges such as economic inequality, healthcare disparities, and environmental sustainability. By focusing on these areas, UTSA can directly contribute to the region's economic development and quality of life.

Increasing Research Funding and Productivity

UTSA is committed to continually expanding research funding and optimizing research productivity through strategically planned activities aimed at growing external funding, expanding facilities and supporting the commercialization process.

External Funding

As a Tier 1 Research Institute, UTSA plans to increase private and federal research expenditures through several strategies:

1. **Targeted Grant Seeking:** The university will focus on high-impact research areas and identify specific funding opportunities from federal agencies like the National Science Foundation (NSF), National Institutes of Health (NIH), U.S. Department of Education (ED), Department of Commerce (DOC), Department of Energy (DOE) and Department of Defense (DoD).

2. **Large Grant Capture Management:** The UTSA Proposal Development team provides long-term, year-round planning, strategy, teaming, and administrative support to research teams to pursue and obtain grants valued at $10 million and above.

3. **Enhanced Proposal Development:** The university will provide resources and training to faculty to improve the quality and competitiveness of grant proposals.

4. **Strategic Partnerships:** Collaborations with other research institutions, national laboratories, and industry partners can lead to joint grant submissions and increased funding opportunities.

5. **Building Strong Research Teams:** UTSA will invest in building strong, interdisciplinary research teams to tackle complex challenges and attract larger grants through its RIGs, which support the teaming and collaboration process to build research teams that are highly qualified for funding. UTSA's Clustered and Connected Hiring Program also aims to expand existing talent hubs in the areas:

   » artificial intelligence
   » brain health
   » microbiome and human health
   » space
   » STEM education
   » transdisciplinary materials research.

6. **Leveraging Institutional Strengths:** By building on its existing strengths in areas like cybersecurity, health sciences, and engineering, UTSA can attract funding for cutting-edge research.

Increasing Industry-Sponsored Research

To increase industry-sponsored research, UTSA will implement the following strategies to significantly increase its external funding, expand its industry partnerships, and solidify its position as a leading research institution:

1. **Industry Partnerships:** The university will strengthen relationships with local, regional, and national industries to identify opportunities for collaborative research.

2. **Technology Transfer:** UTSA will invest in technology transfer offices to facilitate the commercialization of research discoveries and attract industry funding.

3. **Customized Research Services:** The university will offer customized research services to industry partners, tailoring solutions to their specific needs.

4. **Innovation Centers and Incubators:** By establishing innovation centers and incubators, UTSA can foster a culture of entrepreneurship and attract industry investment.

5. **Faculty Engagement:** The university will encourage faculty to engage with industry through consulting, joint research projects, and technology licensing.

Research Facilities

UTSA plans to significantly improve and expand its research facilities to support its growing research enterprise. Some key strategies include:

1. **Investment in Core Facilities:** UTSA will continue to invest in state-of-the-art core research facilities such as genomics, cell analysis, mass spectrometry and proteomics, stem cell, and advanced microscopy and materials characterization labs. Recent acquisitions include an AVITI DNA sequencer, an Orbitrap mass spectrometer, and a flow cytometer, which will enhance research capabilities and attract top researchers.

2. **Infrastructure Development:** The university will prioritize the development of new research buildings and laboratories to accommodate growing research needs and interdisciplinary collaborations. One key area of growth is the UTSA downtown campus. UTSA's upcoming building, San Pedro II, will work in tandem with academic programs and research collaborations in cybersecurity and data science offered by the School of Data Science and National Security Collaboration Center in San Pedro I, which opened in January 2023.

3. **Technology Upgrades:** UTSA will invest in cutting-edge technology, including high-performance computing, data analytics, and artificial intelligence, to support innovative research.

4. **Innovation Hubs:** The university will create innovation hubs and incubators to foster entrepreneurship, technology transfer, and the commercialization of research discoveries. These hubs will provide researchers with the resources and support needed to translate their ideas into real-world applications.

5. **Public-Private Partnerships:** UTSA will seek partnerships with industry, government, and philanthropic organizations to secure funding for research facilities and infrastructure development. For example, in 2024, UTSA received a $2 million gift from USAA to support the new college focused on artificial intelligence, cyber, computing and data science

By investing in its research infrastructure, UTSA aims to create a world-class research environment that attracts top talent, fosters innovation, and drives economic growth.

Commercialization

Technology Transfer and Commercialization Impact
To increase its commercialization impact, UTSA plans to:

1. **Support Technology Transfer:** The Commercialization and Innovation Office provides support to researchers and inventors in identifying, protecting, and licensing intellectual property.

2. **Foster Industry Partnerships:** UTSA will actively engage with industry partners to identify potential commercialization opportunities and establish licensing agreements. For example, the Cybersecure Manufacturing Innovation Institute (CyManII) collaborates with ten industry partners to advance cybersecure technology for commercialization.

3. **Create Innovation Ecosystems:** By fostering innovation ecosystems, the university can encourage entrepreneurship and the formation of startups based on university research.

4. **Provide Entrepreneurial Training:** UTSA will offer training and mentorship programs to faculty, students and community members to help them develop entrepreneurial skills and commercialize their ideas. For example, the Stimulating Urban Renewal through Entrepreneurship (SURE) program provides consultation and training to new and aspiring entrepreneurs in the community from students in the Alvarez College of Business and program leaders.

By prioritizing technology transfer and commercialization, UTSA aims to maximize the economic impact of its research and contribute to regional economic development.

Doctoral Programs

Doctorate Awards

To ensure UTSA's future incorporates strong graduate programs and support for researcher success, a Graduate Student Success for Faculty Excellence Task Force was launched, which informed the below strategies. UTSA should be a destination of choice, and our vision should permeate the below strategies, while also recognizing the barriers that place UTSA at a disadvantage in achieving this goal.

STRATEGY 1
Utilize business intelligence to increase the pipeline of future graduate students and graduation success.

STRATEGY 2
Create new interdisciplinary graduate programs based on market trends.

STRATEGY 3
Encourage a campus wide culture for student fellowship and training through grants and publications.

STRATEGY 4
Enhance programming in support of graduate success and impactful postdoctoral scholarship across campus.

By focusing on these key areas, UTSA aims to attract and retain top graduate students, provide them with the necessary resources and support, and ultimately increase the number of research doctorates awarded.

Supports for Doctoral Candidates

The UTSA Graduate School understands the importance of financial assistance in the decision-making process of selecting and completing a graduate degree. UTSA graduate students are afforded funding opportunities through a variety of sources including grants and loans; department, institutional and external fellowships and scholarships; and research, teaching, and graduate assistantships.

Assistantships

GRADUATE RESEARCH ASSISTANTS (GRA)
Assist faculty members with research projects.

GRADUATE TEACHING ASSISTANTS (GTA)
Support faculty members with teaching courses.

GRADUATE SERVICE ASSISTANTS (GSA)
Provide support within specific units to gain experience in their field.

GRADUATE ADMINISTRATIVE ASSISTANTS (GAA)
Provide administrative support to departments (not eligible for funded doctoral students).

Awards

GRADUATE RESEARCH ASSISTANTS (GRA)
Assist faculty members with research projects.

More information can be found here: **https://graduateschool.utsa.edu/tuition-funding**

Areas of Emphasis

UTSA's doctoral programs are strategically designed to align with high-demand fields and address current and future workforce needs. Program proposals are evidence-based and must demonstrate and provide data on national or regional needs based on labor projections, employer demands, and student interests based on surveys. The university focuses on disciplines that are experiencing significant growth and are critical to the region's economy, including:

COMPUTER SCIENCE AND COMPUTER ENGINEERING

The increasing reliance on technology has created a high demand for skilled professionals in these fields. UTSA's doctoral programs in computer science and computer engineering equip students with the knowledge and skills to address these challenges and drive innovation.

HEALTH SCIENCES

The healthcare industry is experiencing rapid growth, and there is a significant demand for highly qualified professionals in fields such as biomedical engineering, public health, and immunology. UTSA's doctoral programs in these areas prepare students to address pressing health issues and contribute to advancements in healthcare.
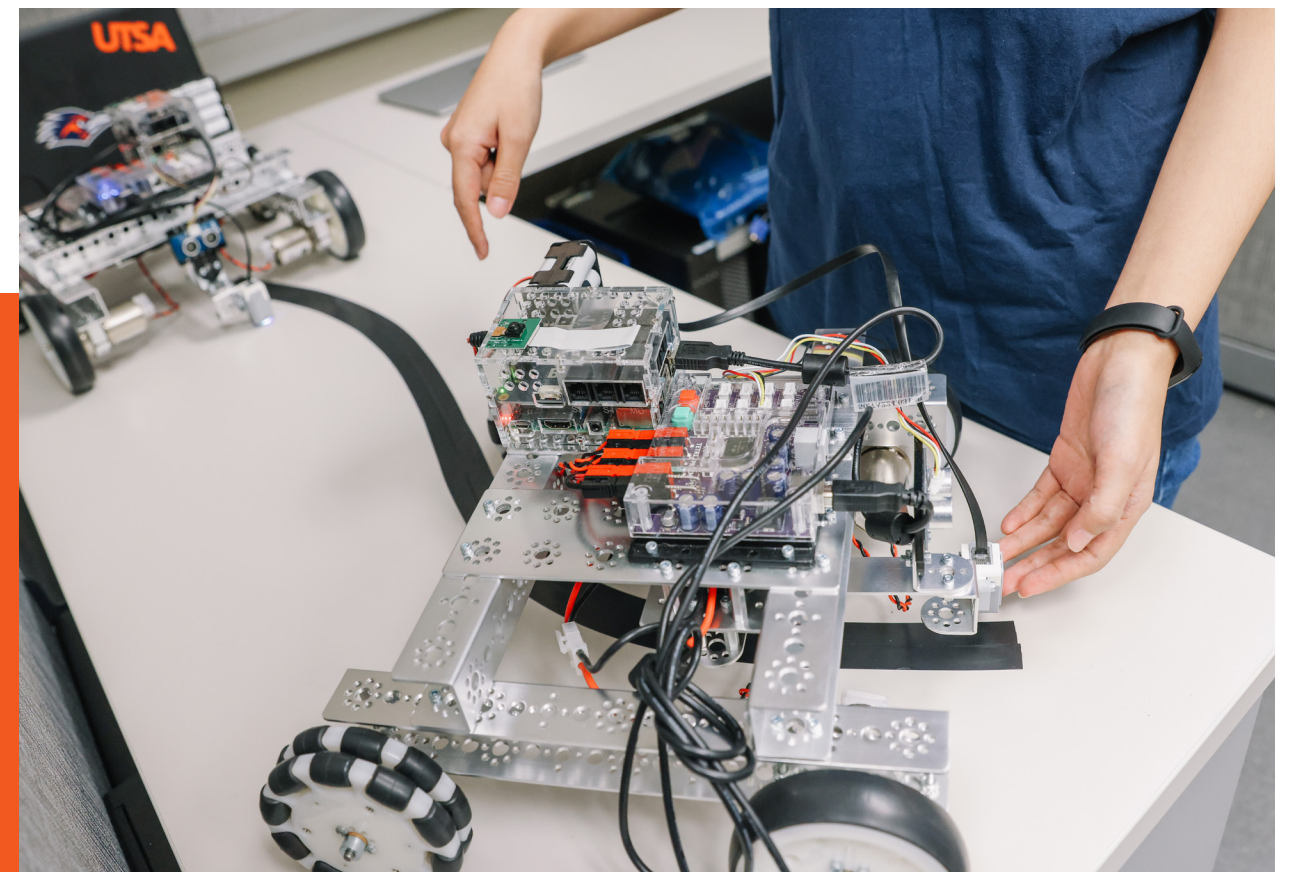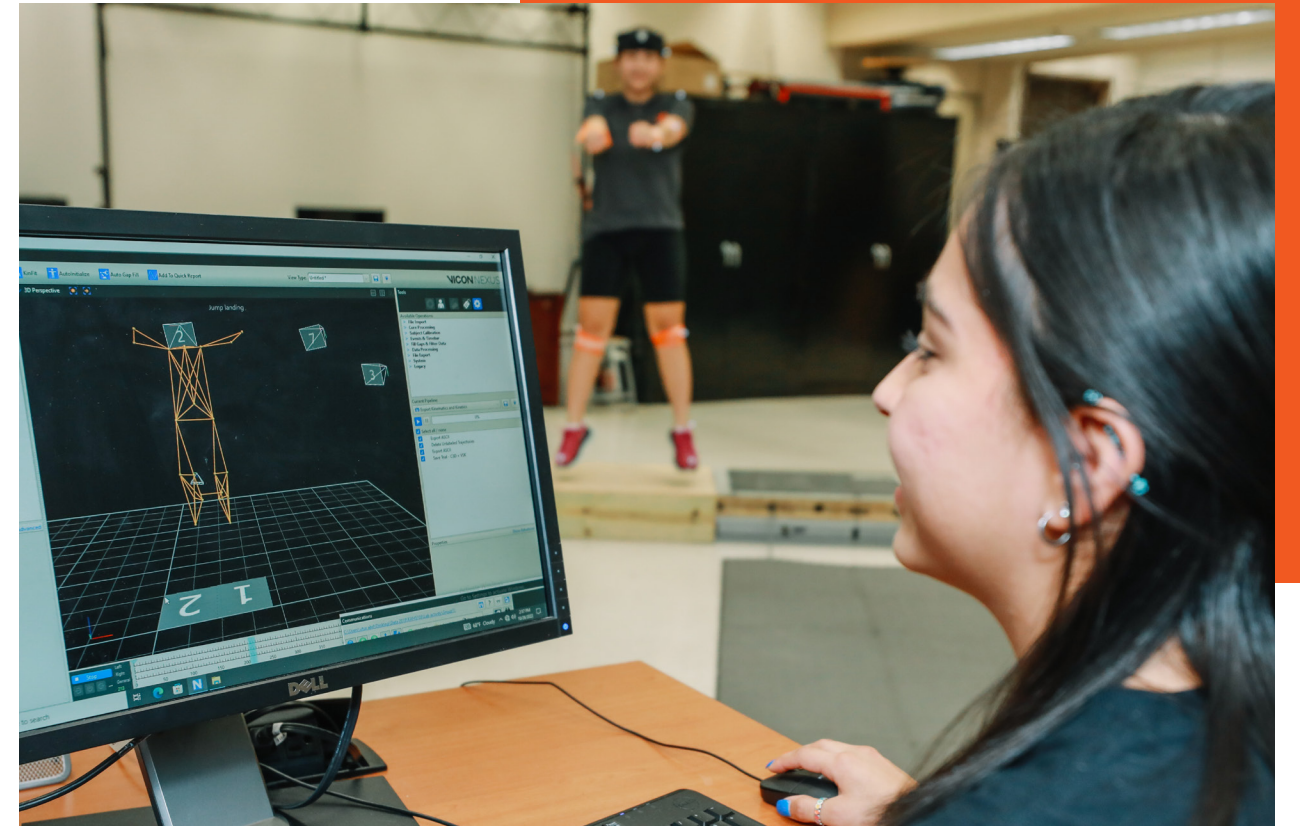
Plan for Faculty Development

New Faculty

UTSA is committed to attracting, developing and retaining tenured, tenure- track, and non-tenure track-faculty through several key strategies:

STRATEGY 1
Enhance faculty and research staff cluster hiring initiatives.

STRATEGY 2
Increase STARs and other faculty hiring program applications.

STRATEGY 3
Create research administration leadership pathways for staff and faculty.

STRATEGY 4
Build training and outreach to increase external joint appointments, sabbaticals and intergovernmental personnel agreements.

Faculty Research

UTSA faculty, research staff and students play a leading role in the university's mission to advance knowledge through research and discovery. Recognizing and celebrating the achievements of all who have excelled in research is an important step in the journey to becoming a premier research university. To that end, UTSA must deliver a balanced approach to scholarly excellence through both symbolic recognition and financial incentives. Through this enabler, the Office of Research will lead a proactive approach for scholarly support and will ensure our faculty are recognized for significant research achievement.

STRATEGY 1
Create and maintain a recognition program for high performing early and mid-career faculty to support faculty retention and expand the role of the Academy of Distinguished Researchers.

STRATEGY 2
Design strategies to increase scholarly impact of UTSA faculty publications.

STRATEGY 3
Increase annual nominations and target networking for academy memberships.

STRATEGY 4
Increase applications and awards to CMUP recognized programs and increase annual funding for the Targeted Scholarly Awards.

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"UTSA is a university of the future, continuing our steady rise to new heights as an urban-serving, Hispanic-thriving discovery enterprise. With Accelerate 2030, we set a path to provide transformational experiences inside and outside of the classroom, engagement opportunities with world-renowned scholars, and preparation for careers and meaningful work that tackle pressing global challenges. These next 10 years will see a transformed university well on the way to realizing our full potential as a driver of the knowledge economy of San Antonio and the surrounding region. The future is bright for UTSA."

-Dr. Taylor Eighmy
President, The University of Texas at San Antonio

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