

# Texas A&M University – Central Texas

## Forge Research Park Strategic Plan 2024-2029



**Forge Research Park Strategic Plan**

2024-2029

(December 21, 2023)

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Forge Research Park Strategic Plan 2024-2029

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## Chapter 1: History of the Forge Research Park 2009-2023

Texas A&M University – Central Texas (A&M Central Texas) was established in 2009 as an independent upper-level university, with a student profile of junior and senior undergraduate students along with graduate students at the master’s and specialist levels. A&M Central Texas was initially created as a branch campus of Tarleton State University (TSU). When the appropriate number of students were reached to separate from TSU (i.e., 1000), A&M Central Texas was established as its own university. However, it was another three years before the A&M Central Texas research functions were completely separated from TSU; the Institutional Review Board (IRB) for human subjects research was under the purview of TSU from 2009 to 2012.

Students at all levels are afforded the opportunity to be involved in research through faculty-led research projects based on classroom opportunities, through research grants and contracts at the university level, or in collaboration with multiple universities. The Forge Research Park, which supports research at A&M Central Texas, was developed through three primary periods: 1. The Formative Years from 2009 to 2015 with no federal research funds, 2. The Growth in Federal Research Funds from 2016 to 2018, and 3. The Planning for a “Forge” Research Park at A&M Central Texas with Plank Research Companies. A brief narrative is provided below for those three periods.

### A&M University-Central Texas Research: Formative Years 2009-2015

From 2009 to 2012, research funding at A&M Central Texas was part of the total TSU research portfolio. It was not until 2012 that A&M Central Texas created a separate research office with an initial Institutional Official (IO) for research oversight within the Federal Wide Authority (FWA) for human subjects research and with a fully constituted IRB. Small grants and contracts under \$10,000 were first awarded to faculty members from the Central Texas area that included local government agencies (e.g., City of Killeen) as well as non-profits. Faculty scholarship was built on traditional research, primarily in the form of non-grant supported peer-reviewed articles, presentations, and books. It was not until 2016 that A&M Central Texas was awarded its first federal grant.

### A&M University-Central Texas Research: Growth in Federal Research Funds 2016-2018

With an interest in solar research (due in part to his involvement at a previous institution in a variety of solar projects), the Inaugural President of A&M Central Texas – Dr. Marc Nigliazzo – supported the formation of a collaboration between A&M Central Texas and Texas A&M University to create an NSF solar research project. The NSF solar research project was funded through an Industry/University Cooperative Research Center (I/UCRC) in collaboration with UT Austin and Colorado State University. There are only 80 I/UCRCs in the country, and therefore A&M Central Texas was able to join a very exclusive group of research universities with several significant outcomes from that initial collaboration. With the NSF Solar I/UCRC grant at \$1.4 million in total funds from NSF and 12 solar-related businesses each providing additional \$50,000 start-up research grants, A&M Central Texas was able to capitalize on that initial source of funding to propose and receive a TAMU System Chancellor’s Research grant of \$1.5 million for a permanent Scanning Electron Microscope (SEM) and a smaller “movable” SEM. Those SEMs were instrumental in attracting for university researchers a significant number of federal grants

totaling over \$11 million from 2016 to 2023, including the first “federally negotiated indirect funded grant” from the Department of Homeland Security (DHS) and the Air Force Research Labs (AFRL) sponsoring cybersecurity research related to hardware and computer software, in collaboration with Texas A&M University. The SEM laboratory was a foundation for the first two Community Project Funding grants for 2022 and 2023 described below.

#### A&M Central Texas Research: University Research Park (URP) “Research” 2018-Present

Based on the initial federal research grants noted above, A&M Central Texas has grown significantly beyond the focus of solar and cybersecurity research to include defense, healthcare, data analytics, and education/archives. However, all research endeavors throughout the A&M Central Texas departments are supported by this Forge Research Park Strategic Plan (as noted in Imperative Seven). The original Office of Research’s research portfolio was expanded to create a full Division of Research, Economic Development, and Innovation known as “REDI.” It is within the Division of REDI that the Forge Research Park was created, in collaboration with a significant number of organizations and businesses, with the following as the prime supporters for the university research park planning from 2018 to the present: 1. Greater Killeen Chamber of Commerce, 2. 14 Forward/ Forge CTX, 3. Centex Technologies, and 4. Trideum, Inc.

Based on the success of the NSF I/UCRC Solar grant, the TAMU System Chancellor’s Research grant, and the DHS/AFRL research grant, A&M Central Texas research was supported by Congressman John Carter’s initiative for Community Project Funds (CPF) in FY 2022 and FY 2023. Those CPFs were a foundation for the exponential amount of research funds flowing to A&M Central Texas from 2022 to the present, and to date will extend into 2027. In addition to Congressman John Carter’s support, Congressman August Pfluger has also demonstrated support for the A&M Central Texas research portfolio by approving a CPF for 2024. All the CPFs are described below.

While the CPFs were in negotiation and implementation, a collaboration grew among the A&M Central Texas Division of REDI, Division of Finance & Administration, and the Greater Killeen Chamber of Commerce, to propose a university research park planning grant to the Office of Local Defense Community Cooperation (OLDCC) within the Department of Defense (DoD). That grant was awarded to A&M Central Texas with the funding management provided by the Greater Killeen Chamber of Commerce. The \$1.2 million OLDCC grant was used to fund a project by Perkins & Will, a global design and architecture company, to review local opportunities and create a document to guide the development of a university research park at A&M Central Texas. The full report from Perkins & Will is provided as an addendum to this strategic plan and has been used for many of the suggestions throughout this document.

#### CPF: Drivers for Research Success

Included in the significant support provided by Congressman John Carter to A&M Central Texas is the guidance on the application for and the award of the competitive DHS/AFRL Cybersecurity grant, as well as the CPFs for 2022 and 2023. Both the CPFs for 2022 and 2023 were funded; their short synopses are below:

CPF 2022: AFRL Award for Development of Artificial Intelligence & Deep Learning based techniques and solutions for threat detection and protection against cyber attacks. Funded at \$2.7 million.

CPF 2023: ATEC Army Award for Enlargement and Enhancement of Army Operational Test Command (OTC) Testing & Development. Funded at \$3.9 million.

Following the significant support for A&M Central Texas by Congressman John Carter, Congressman August Pfluger also provided significant support starting with the CPF 2024 award. Although the CPF 2024 was awarded, funding by Congress is still under discussion at the time of this strategic plan first public draft (i.e., December 21, 2023). A short synopsis for the CPF 2024 is provided here:

CPF 2024: Housing and Urban Development potential funding for a Forge Economic Development Incubator (FEDI) located within a Killeen Refurbished Building with a Military Transition Program (MTP) that is at the national level for all DoD branches. The FEDI bridges the Forge Research Park at the A&M Campus with the beginning of an Incubator model throughout the Central Texas area.

The MTP focuses on supporting the veteran/retiree to a “Transition for Life” program that provides information and guidance on educational opportunities through the doctorate level, workforce development, and healthcare through the end of life; Funding proposed at \$2.7 million.

At the time of the Forge Research Park Strategic Plan creation, the most current planning is for a CPF 2025 award. Based on requesting support from both Congressman John Carter and Congressman August Pfluger, the CPF 2025 may include funding by either congressman or by both. A short synopsis for the CPF 2025 is provided here:

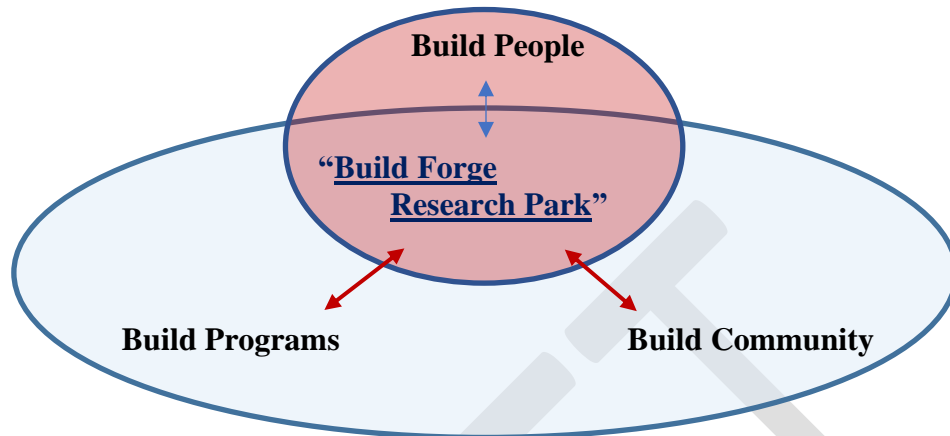
CPF2025: Proposed funding by the National Institute of Standards and Technology (NIST) to support development of two computer laboratories: one for High Performance Computing research and one for semiconductor research. Funding proposed at \$1.99 million for each laboratory.

#### Support for the Research Park Research

To date, the Forge Research Park is providing space for two “plank/foundation” businesses that are incorporated/embedded within the A&M Central Texas buildings. Those two businesses are: 1. Centex Technologies, and 2. Trideum Inc. The two businesses conduct research in collaboration with A&M Central Texas faculty members and students and thus provide a uniquely “embedded” configuration that is a model for new types of university research parks. Moving beyond the embedded configuration is a proposal for a future stand-alone research building and park area within the A&M Central Texas campus, to support further research park collaborations with other universities, government entities, and businesses looking to work side-by-side with A&M Central Texas faculty and staff members and students.

Future research park research can continue to build on the research endeavors currently in place and should expand even further to “**Build Bold**” for people conducting the research, to

continue to support new research programs and to support community endeavors to support and conduct research with the outcome that all those endeavors will further build the Forge Research Park at A&M Central Texas.



Forge Research Park  
with Embedded Businesses  
At  
Texas A&M University – Central Texas  
2024



Forge Research Park  
with Embedded Businesses

Separate Research Park Buildings

Separate Airport Landing Strip, Drone Space, Rocket Launch Pad

Separate Convention Center for Research Conferences & Symposiums

Separate Research Focused Apartments and Homes for Logo “Live – Work – Play”

Separate Solar Research Park for University Utility Support

And Many More Community Based Programs

At  
Texas A&M University – Central Texas  
2030 and Beyond





## Chapter 2: Mission, Vision, & Core Values – A&M University-Central Texas

**Mission:** Texas A&M University-Central Texas is a public, upper-level university offering baccalaureate and graduate degrees important to the region and the state. It is committed to high quality, rigorous, and innovative educational programs delivered in a variety of instructional modes to a diverse student population through exceptional teaching, service, and applied scholarship. With an emphasis on community engagement, the university employs emerging technology to enhance student learning and to nurture its partnerships with regional community colleges, the military presence in its region, and the community at large.

**Vision:** Texas A&M University-Central Texas will achieve national recognition as an upper-level university, offering high quality and affordable undergraduate and graduate educational programs to address regional and statewide needs.

**Values:**

**EXCELLENCE & ACHIEVEMENT:** We strive to continuously improve, innovate, and exceed expectations.

**COMPASSION:** We care about the feelings of others. When others are suffering, we empathize and offer help.

**INTEGRITY:** We conduct ourselves in an ethical and respectful manner.

**KNOWLEDGE:** We provide educational experiences to encourage lifelong learning and intellectual curiosity.

**DIVERSITY:** We respect and value both differences and similarities in our students, co-workers, and other stakeholders.

**INITIATIVE:** We encourage the involvement and the contribution of each employee. We create a workplace where every employee can share a sense of ownership.

**COLLABORATION:** We develop and maintain partnerships to serve the needs of our students, faculty, staff, and external stakeholders.

### Chapter 3: Mission, Vision, & Core Values – Forge Research Park

**Mission:** To provide a research environment with passion for innovative collaborations at the intersection of business, academics, and government. We want to increase our workforce, improve community economic development, and act as a catalyst to enhance our future defense, healthcare, education, and Science-Technology-Engineering-Arts-Mathematics (STEAM) disciplines in Texas and beyond.

**Vision:** To support a world with future decisions founded upon evidence based research

#### Core Values

##### Knowledge and Innovation

- Enrich the daily experience by integrating research, academic, and industry uses
- Design distinct characteristic research with Ft. Cavazos
- Achieve student success in academics and personal development
- Consider the future of education & work

##### Economy

- Build strategic opportunities and partnerships to further the mission and reach of the institution and local communities
- Attract talent and investment to Central Texas
- Develop high-quality facilities that currently do not exist in the Killeen market
- Position the research park as a nexus between government and industry

##### Community

- Develop a collaborative space and activity that fosters interaction among individuals and organizations
- Foster the variation among students, faculty, support staff, researchers, industry professionals and families
- Create a cohesive, well-connected place that is accessible and welcoming to all
- Establish a sense of place unique to A&M-Central Texas
- Celebrate & enhance tradition & legacy of the A&M-Central Texas brand

##### Ecology

- Preserve the unique ecology and natural resources of the site
- Create a robust landscape and network of green spaces
- Implement low-impact development (LID) strategies that go beyond conventional development
- Identify future development opportunity zones and areas where development is not appropriate

*[Best Practices – Guidance from Association of University Research Parks with response]*

1| Program: The most successful research parks are established around a programmatic strategy to capitalize on existing or planned research funding and growth.

- Prioritize defense-oriented industry with civilian applications to bolster the existing relationship with Fort Ft. Cavazos.

- Build on existing funding opportunities available through federal, state, and local sources.
- Identify programmatic areas that are growing to attract students, partners, and industry.

2| Governance: University-led research parks benefit from governance structures that provide some level of independence and flexibility.

- Establish a governance structure that prioritizes research partnerships and programmatic outcomes rather than institutional process.
- Create governance processes that allow the research park to move at the speed of business.
- Integrate Federal agencies into governance thinking to help drive partnerships and programs forward.

3 | Implementation: Clear and well-developed tactics of implementation, such as real estate development planning and partnerships, often lead to successful outcomes.

- Address deed restrictions and other property constraints that may affect development potential.
- Invest in catalytic infrastructure to encourage and invite private capital.
- Explore State and Federal funding and resources for catalytic investment to support existing and key growth industries.

Guiding Principles:

- An epicenter of innovation that puts Central Texas on the research map.
- An engine of economic opportunity and resilience for the region.
- An active hub where students, researchers, industry, and government connect to solve problems.
- A place that is representative of the region, its resources, and community.

*Logo: Live, Work, Play at the Forge*

## Chapter 4: Development of the Forge Research Park Strategic Plan

This document is the result of over 100 individuals providing input. It is anticipated to be a “living” document whereby individuals continue to discuss the imperatives and goals, with updates, renewals, or even deletions when necessary for new research endeavors in the Central Texas region and beyond.

A timeline for development of the research park is provided in Chapter 13, with the timeline for the development of the strategic plan presented here:

- 2015-2020: Three versions of the Forge Research Park Strategic Plan were developed with the following:
1. The “original committee” creating the strategic plan draft, led by A&M Central Texas in collaboration with the Greater Killeen Chamber of Commerce, businesses in the Central Texas region within the 14 Forward business group, input from the Battelle Technology Partnership Practice Report, several on-site visits to operating university research parks, and membership with the Association of University Research Parks by the A&M Central Texas and Greater Killeen Chamber of Commerce,
  2. The Greater Killeen Chamber of Commerce as the lead organization, in collaboration with A&M Central Texas, businesses in the Central Texas region, and the 14 Forward business group, prior to the OLDCC grant,
  3. The Greater Killeen Chamber of Commerce as the lead organization, in collaboration with A&M Central Texas, businesses in the Central Texas region, and the 14 Forward business group, with information from the document provided by the OLDCC grant advisors at Perkins & Will.
- 2021-2024: From the three versions noted above, this document was created with the input from the following organizations, and specifically by the committees also noted:
1. The Greater Killeen Chamber of Commerce, A&M Central Texas, Centex Technologies (A Plank/Original Business in the Forge Research Park), Trideum (A Plank/Original Business in the Forge Research Park), additional businesses (e.g., Solution One), Killeen City Representatives, Nolanville Economic Development representatives, Harker Heights Chamber of Commerce representatives, Copperas Cove Economic Development representatives,
  2. The Forge Research Park Planning Committee Members (individuals from many of the organizations noted directly above),
  3. The Forge Research Park Summit Planning Committee Members (individuals from many of the organizations noted directly above, as well as participants from the initial four Summit meetings (2021, 2022, 2023, and 2024), and
  4. The A&M Central Texas Executive Committee led by its Inaugural President, Dr. Marc Nigliazzo.

## Chapter 5: Summary of Imperatives

- 1.1 Support current research projects that enhance military operations and equipment with a focus on army operations and especially Ft. Cavazos, as conducted by A&M Central Texas faculty, staff, and students, and by businesses, non-profits, and government agencies
- 1.2 Support future research proposals that enhance military operations and equipment with a focus on army operations and especially Ft. Cavazos, as proposed by A&M Central Texas faculty, staff, and students, and by businesses, non-profits, and government agencies
- 1.3 Continuously expand the A&M Central Texas research infrastructure to enhance military research projects, as conducted by A&M Central Texas faculty, staff, and students, and by businesses, non-profits, and government agencies
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- 2.1 Support current research projects that enhance alternative energy, especially solar energy, with a focus on balance of systems and photovoltaic cell efficiencies, as conducted by A&M Central Texas faculty, staff, and students, and by businesses, non-profits, and government agencies
- 2.2 Support future research proposals that enhance alternative energy, especially solar energy, as proposed by A&M Central Texas faculty, staff, and students, and by businesses, non-profits, and government agencies
- 2.3 Continuously expand the A&M Central Texas research infrastructure to enhance alternative energy, especially solar energy, as conducted by A&M Central Texas faculty, staff, and students, and by businesses, non-profits, and government agencies
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- 3.1 Support current research projects that enhance cybersecurity, especially those supported by the cybersecurity center, as conducted by A&M Central Texas faculty, staff, and students, and by businesses, non-profits, and government agencies
- 3.2 Support future research proposals that enhance cybersecurity, especially those proposed by A&M Central Texas faculty, staff, and students, and by businesses, non-profits, and government agencies
- 3.3 Continuously expand the A&M Central Texas research infrastructure to enhance cybersecurity research, especially those supported by the cybersecurity center, as conducted by A&M Central Texas faculty, staff, and students, and by businesses, non-profits, and government agencies

4.1 Support current research projects that enhance healthcare research, as conducted by A&M Central Texas faculty, staff, and students, and by businesses, non-profits, and government agencies

4.2 Support future research proposals that enhance healthcare research, especially those proposed by A&M Central Texas faculty, staff, and students, and by businesses, non-profits, and government agencies

4.3 Continuously expand the A&M Central Texas research infrastructure to enhance healthcare research, as conducted by A&M Central Texas faculty, staff, and students, and by businesses, non-profits, and government agencies

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5.1 Support current research projects that enhance data analytics research, as conducted by A&M Central Texas faculty, staff, and students, and by businesses, non-profits, and government agencies

5.2 Support future research proposals that enhance data analytics research, especially those proposed by A&M Central Texas faculty, staff, and students, and by businesses, non-profits, and government agencies

5.3 Continuously expand the A&M Central Texas research infrastructure to enhance data analytics research, as conducted by A&M Central Texas faculty, staff, and students, and by businesses, non-profits, and government agencies

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6.1 Support current research projects that enhance education and archives research, as conducted by A&M Central Texas faculty, staff, and students, and by businesses, non-profits, and government agencies

6.2 Support future research proposals that enhance education and archives research, especially those proposed by A&M Central Texas faculty, staff, and students, and by businesses, non-profits, and government agencies

6.3 Continuously expand the A&M Central Texas research infrastructure to enhance education and archives research, as conducted by A&M Central Texas faculty, staff, and students, and by businesses, non-profits, and government agencies

- 7.1 Support current research projects that enhance all disciplines beyond those indicated in Sections 1.1 to 6.1 as conducted by A&M Central Texas faculty, staff, and students, and by businesses, non-profits, and government agencies
- 7.2 Support future research proposals that enhance all disciplines beyond those indicated in Sections 1.1 to 6.1, especially those proposed by A&M Central Texas faculty, staff, and students, and by businesses, non-profits, and government agencies
- 7.3 Continuously expand the A&M Central Texas research infrastructure to enhance all disciplines beyond those indicated in Sections 1.1 to 6.1, as conducted by A&M Central Texas faculty, staff, and students, and by businesses, non-profits, and government agencies

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## Chapter 6: Imperative One: Defense Research Support

- 1.1 Support current research projects that enhance military operations and equipment with a focus on army operations and especially Ft. Cavazos, as conducted by A&M Central Texas faculty, staff, and students, and by businesses, non-profits, and government agencies
- 1.2 Support future research proposals that enhance military operations and equipment with a focus on army operations and especially Ft. Cavazos, as proposed by A&M Central Texas faculty, staff, and students, and by businesses, non-profits, and government agencies
- 1.3 Continuously expand the A&M Central Texas research infrastructure to enhance military research projects, as conducted by A&M Central Texas faculty, staff, and students, and by businesses, non-profits, and government agencies

### Goals

- 1.1.1. Ensure the current Department of Homeland Security – Air Force Research Lab Contract is completed in 2024. Supported by Congressman John Carter, with a focus on cybersecurity, with direct support through the College of Business Administration and the Center for Cybersecurity Innovation
- 1.1.2. Ensure the current Air Force Research Lab Community Project Fund 2022 Contract is completed in 2025, Sponsored by Congressman John Carter, with a focus on development of AI and deep learning for threat detection and protection against cyber-attacks, with direct support through the College of Business Administration and the Center for Cybersecurity Innovation.
- 1.1.3. Ensure the current Army Research Lab – Army Test and Evaluation Command Community Project Fund 2023 Contract / Grant is completed in 2026, Sponsored by Congressman John Carter, with a focus on enhanced Scanning Electron Microscopy for Defense-related research, Causal Analytics & Big Data (CABD) Certification for military affiliated members, and Immersive Virtual Reality Education research, with direct support through the University Center for Applied Research & Engagement, College of Arts & Sciences, College of Business Administration, and College of Education & Human Development.
- 1.2.1. Ensure the proposed Housing and Urban Development Community Project Fund 2024 Grant is funded and implemented on time, Sponsored by Congressman August Pfluger. The CPF 2024 focuses on refurbishing a Killeen Building to house the Forge Economic Development Incubator (FEDI) with a focus on the Military Transition Program (MTP) that enhances the current transition programs at the DoD level (i.e., all military branches). The focus of the MTP is to provide “Transition for Life” support for higher education degrees/certificates, improved workforce models, and enhanced healthcare from civilian transfer care to end of life care – including memory care.
- 1.2.2. Ensure the proposed National Institute of Standards and Technology Community Project Fund 2025 Grant is submitted on time. Potentially sponsored by Congressman August Pfluger and Congressman John Carter, to enhance use of Artificial Intelligence, Machine

Learning, and Deep Learning to prevent cyberattacks, especially those related to military operations, and to support development of innovation and security for semiconductor chips

- 1.2.3. Ensure ongoing research collaborations are explored for future grants and contracts with the following organizations: 1. Ft. Cavazos III Corp, 2. Army Operational Test Command, 3. Army Test and Evaluation Command, 4. Similar organizations as 1-3 in all DoD branches, 5. Defense Contractors, 6. Non-Profits collaborating with DoD branches, and 7. Public and Private Higher Education Institutions interested in Defense-related research
- 1.3.1. Develop research infrastructure support with internal professional development for faculty, staff, and students interested in defense research
- 1.3.2. Develop research infrastructure support through collaborations with TAMU System agencies, especially RELLIS agencies involved in defense-focused research
- 1.3.3. Develop research infrastructure support through funding from private and public resources for a dedicated initial research building, especially for a collaboration with Ft. Cavazos and RELLIS
- 1.3.4. Develop research infrastructure support through funding from private and public resources for additional research buildings, especially for collaborations with Ft. Cavazos and RELLIS and with businesses, non-profits, and government agencies

See the Addendum for specific research projects proposed for military operations beyond those mentioned here.

## Chapter 7: Imperative Two: Alternative Energy Research Support

- 2.1 Support current research projects that enhance alternative energy, especially solar energy, with a focus on balance of systems and photovoltaic cell efficiencies, as conducted by A&M Central Texas faculty, staff, and students, and by businesses, non-profits, and government agencies
- 2.2 Support future research proposals that enhance alternative energy, especially solar energy, as proposed by A&M Central Texas faculty, staff, and students, and by businesses, non-profits, and government agencies
- 2.3 Continuously expand the A&M Central Texas research infrastructure to enhance alternative energy, especially solar energy, as conducted by A&M Central Texas faculty, staff, and students, and by businesses, non-profits, and government agencies

### Goals

- 2.1.1 Ensure the current NSF Industry/University Cooperative Research Center for Solar Research, titled SPF 2050, is supported by faculty members, research scientists, post-docs, graduate students, and/or undergraduate students, as appropriate.
- 2.1.2 Ensure the SPF 2050 provides a collaboration model among Texas A&M University, A&M Central Texas, the University of Texas at Austin, and Colorado State University to support additional mini-grant and full grant opportunities beyond those already completed
- 2.2.1 Develop future research grants and contracts at the federal, state, and local levels that utilize all the A&M Central Texas infrastructure including the Scanning Electron Microscopes for alternative energy and especially solar energy
- 2.3.1 Develop enhanced research capabilities for alternative energy, especially solar energy, which includes greater collaboration with the Texas A&M University System universities and state agencies

See the Addendum for specific research projects proposed for alternative energy operations beyond those mentioned here.

## Chapter 8: Imperative Three: Cybersecurity Research Support

- 3.1 Support current research projects that enhance cybersecurity, especially those supported by the cybersecurity center, as conducted by A&M Central Texas faculty, staff, and students, and by businesses, non-profits, and government agencies
- 3.2 Support future research proposals that enhance cybersecurity, especially those proposed by A&M Central Texas faculty, staff, and students, and by businesses, non-profits, and government agencies
- 3.3 Continuously expand the A&M Central Texas research infrastructure to enhance cybersecurity research, especially those supported by the cybersecurity center, as conducted by A&M Central Texas faculty, staff, and students, and by businesses, non-profits, and government agencies

### Goals

- 3.1.1 Ensure the current faculty providing cybersecurity non-defense-related research are supported by all the A&M Central Texas infrastructure including Division of Research, Economic Development, & Innovation, as well as TAMU System Sponsored Research Services (SRS)
- 3.1.2 Ensure the current faculty providing cybersecurity non-defense-related research are informed of new additional grants and contracts at the federal, state, and local levels, including business-related research support
- 3.2.1 Develop future research grants and contracts at the federal, state, and local levels that utilize all the A&M Central Texas infrastructure including the Scanning Electron Microscopes for cybersecurity non-defense-related research
- 3.3.1 Develop enhanced research capabilities for cybersecurity research including expansion of the cybersecurity center and fostering greater collaboration with the Texas A&M University System universities and state agencies

See the Addendum for specific research projects proposed for cybersecurity operations beyond those mentioned here.

## Chapter 9: Imperative Four: Healthcare Research Support

- 4.1 Support current research projects that enhance healthcare research, as conducted by A&M Central Texas faculty, staff, and students, and by businesses, non-profits, and government agencies
- 4.2 Support future research proposals that enhance healthcare research, especially those proposed by A&M Central Texas faculty, staff, and students, and by businesses, non-profits, and government agencies
- 4.3 Continuously expand the A&M Central Texas research infrastructure to enhance healthcare research, as conducted by A&M Central Texas faculty, staff, and students, and by businesses, non-profits, and government agencies

### Goals

- 4.1.1 Ensure the current faculty providing healthcare-related research, including but not limited to nursing, health administration at the acute and long-term care levels, social work, psychology and counseling, and specialist counseling in schools, are supported by all the A&M Central Texas infrastructure including Division of Research, Economic Development, & Innovation, as well as TAMU System Sponsored Research Services (SRS)
- 4.1.2 Ensure the current faculty providing healthcare-related research, including those disciplines listed above in 4.1.1 are informed of new additional grants and contracts at the federal, state, and local levels including business-related research support
- 4.2.1 Develop future research grants and contracts at the federal, state, and local levels that utilize all the A&M Central Texas infrastructure, including the Scanning Electron Microscopes for healthcare-related research
- 4.3.1 Develop enhanced research capabilities for healthcare research, including expansion of the University Center for Applied Research and Engagement (UCARE), focusing on respective research and fostering greater collaboration with the Texas A&M University System universities and state agencies

See the Addendum for specific research projects proposed for healthcare operations beyond those mentioned here.

## Chapter 10: Imperative Five: Data Analytics Research Support

- 5.1 Support current research projects that enhance data analytics research, as conducted by A&M Central Texas faculty, staff, and students, and by businesses, non-profits, and government agencies
- 5.2 Support future research proposals that enhance data analytics research, especially those proposed by A&M Central Texas faculty, staff, and students, and by businesses, non-profits, and government agencies
- 5.3 Continuously expand the A&M Central Texas research infrastructure to enhance data analytics research, as conducted by A&M Central Texas faculty, staff, and students, and by businesses, non-profits, and government agencies

### Goals

- 5.1.1 Ensure the current faculty providing data analytics-related research, including but not limited to management and marketing, computer information systems, mathematics, and experimental education, are supported by all the A&M Central Texas infrastructure including Division of Research, Economic Development, & Innovation, as well as TAMU System Sponsored Research Services (SRS)
- 5.1.2 Ensure the current faculty providing data analytics-related research, including those disciplines listed above in 5.1.1 are informed of new additional grants and contracts at the federal, state, and local levels including business-related research support
- 5.2.1 Develop future research grants and contracts at the federal, state, and local levels that utilize all the A&M Central Texas infrastructure including the most advanced “Causal Analytics” software (e.g., R Lavann, SPSS AMOS, LISREL) for data analytics-related research
- 5.3.1 Develop enhanced research capabilities for data analytics research including expansion of the Center for Cybersecurity Innovation and UCARE, focusing on respective research and fostering greater collaboration with the Texas A&M University System universities and state agencies

See the Addendum for specific research projects proposed for data analytics operations beyond those mentioned here.

## Chapter 11: Imperative Six: Education & Archives Research Support

- 6.1 Support current research projects that enhance education and archives research, as conducted by A&M Central Texas faculty, staff, and students, and by businesses, non-profits, and government agencies
- 6.2 Support future research proposals that enhance education and archives research, especially those proposed by A&M Central Texas faculty, staff, and students, and by businesses, non-profits, and government agencies
- 6.3 Continuously expand the A&M Central Texas research infrastructure to enhance education and archives research, as conducted by A&M Central Texas faculty, staff, and students, and by businesses, non-profits, and government agencies

### Goals

- 6.1.1 Ensure the current faculty providing education and archives-related research, including dissemination of a Boyer model focus on the scholarship of teaching for all education and archives disciplines, are supported by all the A&M Central Texas infrastructure including Division of Research, Economic Development, & Innovation, as well as TAMU System Sponsored Research Services (SRS)
- 6.1.2 Ensure the current faculty providing education and archives-related research are informed of new additional grants and contracts at the federal, state, and local levels including business-related research support
  - 6.2.1 Develop future research grants and contracts at the federal, state, and local levels that utilize all the A&M Central Texas infrastructure for education and archive-related research
- 6.3.1 Develop enhanced research capabilities for education and archives research including expansion of the UCARE, focusing on respective research and fostering greater collaboration with the Texas A&M University System universities and state agencies

See the Addendum for specific research projects proposed for education and archives operations beyond those mentioned here.



## Chapter 12: Imperative Seven: Full A&M Central Texas Curriculum Research Support

- 7.1 Support current research projects that enhance all disciplines beyond those indicated in Sections 1.1 to 6.1 as conducted by A&M Central Texas faculty, staff, and students, and by businesses, non-profits, and government agencies
- 7.2 Support future research proposals that enhance all disciplines beyond those indicated in Sections 1.1 to 6.1, especially those proposed by A&M Central Texas faculty, staff, and students, and by businesses, non-profits, and government agencies
- 7.3 Continuously expand the A&M Central Texas research infrastructure to enhance all disciplines beyond those indicated in Sections 1.1 to 6.1, as conducted by A&M Central Texas faculty, staff, and students, and by businesses, non-profits, and government agencies

### Goals

- 7.1.1 Ensure the current research conducted by faculty members in disciplines beyond those indicated in Sections 1.1 to 6.1 above, are supported by all the A&M Central Texas infrastructure including Division of Research, Economic Development, & Innovation, as well as TAMU System Sponsored Research Services (SRS)
- 7.1.2 Ensure the current research conducted by faculty members in disciplines beyond those indicated in Sections 1.1 to 6.1 above, are informed of new additional grants and contracts at the federal, state, and local levels, including business-related research support
- 7.2.1 Develop future research grants and contracts at the federal, state, and local levels that utilize all the A&M Central Texas infrastructure for faculty members in disciplines beyond those indicated in Sections 1.1 to 6.1 above
- 7.3.1 Develop enhanced research capabilities for all faculty members in disciplines beyond those indicated in Sections 1.1 to 6.1 above including expansion of UCARE services and infrastructure focusing on respective research and fostering greater collaboration with the Texas A&M University System universities and state agencies

See the Addendum for specific research projects proposed for all disciplines beyond those indicated in Sections 1.1 to 6.1 above

### Chapter 13: Timeline: Forge Research Park

2009: Texas A&M University-Central Texas Established as Part of the TAMU System

2012: Texas A&M University-Central Texas Research Completely Separated From Tarleton State University

2012 to 2016: Texas A&M University-Central Texas Receives Research Funds at Local and State Levels

2016: Texas A&M University-Central Texas Receives First Federal Funding in Collaboration with Texas A&M University, University of Texas at Austin, and Colorado State University within an NSF Industry/University Cooperation Research Center for Solar Research

2017-2021: Texas A&M University-Central Texas Creates Cooperative Research Program with First Two Embedded Business Research Businesses – Centex Technologies and Trideum Inc.

2022-Present: Texas A&M University-Central Texas Negotiates Higher Federal Indirect Cost Funding to Support Expansion of Research Infrastructure (i.e., Increased from 10% Minimum to 47%), and secures funds for first Community Project Fund (CPF 2022) with additional CPFs funded (CPF 2023), awarded (CPF 2024), and in progress (CPF 2025).

## Chapter 14: Acknowledgements

Individuals providing input for the Forge Research Park Strategic Plan include the following:

### Forge Research Park Strategic Plan Committee (Research Park Planning Committee)

- Chair: Mr. Scott Connell: President & CEO - Greater Killeen Chamber of Commerce / Chair of the Forge Research Park Planning Committee
- Executive Member: Mr. Ron McNamara: Texas Operations Manager - Trideum Inc.
- Executive Member: Dr. Walter Murphy: Associate Vice President – Research, Economic Development, & Innovation - Texas A&M University-Central Texas
- Executive Member: Dr. Russ Porter: Deputy Ethics Officer – Texas A&M University System / Vice President for Research, Economic Development, & Innovation / Professor of Business – Texas A&M University-Central Texas
- Member: Mr. Abdul Subhani: President & CEO – Centex Technologies
- Member: COL (Ret) Mr. Keith Sledd: Executive Director, Heart of Texas Defense Alliance
- Member: Dr. Michele Carter: Chancellor, Central Texas College
- Member: Ms. Rebekah Moon, IOM: Vice President of Investor Services, Greater Killeen Chamber of Commerce
- Member: Mr. Todd Lutz: Vice President of Finance & Administration, Texas A&M University-Central Texas
- Member: COL (Ret) Mr. Todd Fox: President of Fort Cavazos National Bank
- Member: Dr. Lucas Loafman: Interim Dean, College of Business Administration – Texas A&M University-Central Texas
- Member: Mr. Tyrone McLaurin: President & CEO Solution One Industries, Inc.
- Past Member: MG (Ret) Ken Cox: Former Deputy Command General III Corp, Fort Cavazos
- Past Member: Mr. John Crutchfield: Past President Greater Killeen Chamber of Commerce
- Past Member: Ms. Jennifer Hetzel, IOM: Past Director-Research Greater Killeen Chamber of Commerce
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- Past Member: Mr. Brian OConnor: Former Vice President Economic Development, Greater Killeen Chamber of Commerce
- Past Member: SES (Ret) Mr. John Diem: Former Executive Director of Army Operational Test Command

### Texas A&M University Executive Council (Advisors)

- Dr. Marc Nigliazzo: President Emeritus
- Dr. Richard Rhodes: Interim President
- Dr. Peg Gray-Vickrey: Provost and Vice President for Academic & Student Affairs
- Mr. Todd Lutz: Vice President of Finance & Administration
- Dr. Russ Porter: Vice President for Research, Economic Development, & Innovation
- Mr. Clifton Jones: Associate Vice President for Enrollment Management & University Relations
- Dr. Brandon Griggs: Assistant Vice President and Dean for Student Affairs

Texas A&M University Executive Council (Advisors – Continued)

- Ms. Deserie Mensch: Chief Ethics & Compliance Officer
- Dr. Karen Clos: Director of Communication
- Ms. Vicky Ferguson: Executive Assistant to the President

Forge Research Park Summit Committee (Advisors)

- Chair (Fourth Summit): Mr. Ron McNamara: Texas Operations Manager – Trideum, Inc.
- Chair (Third Summit): Dr. Lia Amuna: Director Student Wellness & Counseling, Texas A&M University-Central Texas
- Chair (Second Summit): Dr. Tina Ady: Deputy Chancellor, Central Texas College
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- COL (Ret) Mr. Keith Sledd: Executive Director, Heart of Texas Defense Alliance
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- Mr. Scott Connell: President & CEO - Greater Killeen Chamber of Commerce / Chair of the Forge University Research Park Planning Committee
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- Mr. Charley Ayers: Director, Industry & Education Partnerships Workforce Solutions of Central Texas
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- Dr. Susan Guzman-Trevino: Provost & Vice President Academic Affairs and Student Services of Temple College
- Mr. John Crutchfield: Past President Greater Killeen Chamber of Commerce
- Mr. Brian OConnor: Economic Development Coordinator, Nolanville, TX
- Dr. Michele Carter: Chancellor, Central Texas College

Texas A&M University-Central Texas, Division of Research, Economic Development, & Innovation  
(REDI) (Advisors)

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- Dr. Walter Murphy: Associate Vice President – REDI
- Mr. Stephen Porter: Research Artist - REDI

Texas A&M University-Central Texas, Division of Research, Economic Development, & Innovation  
(REDI) (Advisors) (Continued)

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- Dr. Linh Pham: Chair-Institutional Biosafety Committee
- Dr. Laura Weiser-Erlandson: Chair-Institutional Animal Care and Use Committee
- Ms. Jacqueline Orellana: Director of Research Compliance
- Ms. Bernadette Serna: Managing Editor of "The Light"
- Dr. Carmelia Amuna: Director of Research Safety
- Dr. Babatunde Sawyerr: Inaugural Fulbright Visiting Scholar
- Dr. Sanfrena Britt: IRB Advisor
- Dr. Lisa Bunkowski: Qualitative Research Advisor
- Ms. Deserie Mensch: Chair-Institutional Ethics Committee
- Dr. Jeff Kirk: Dean of the College of Education and Human Development (Advisor)
- Dr. Russ Porter: Deputy Ethics Officer – Texas A&M University System /  
Vice President for Research, Economic Development, & Innovation
- Dr. Coady Lapierre: Inaugural and Past Chair-IRB
- Dr. Anitha Chennamaneni: Past Chair-IRB

## Chapter 15: About the Texas A&M University System

The Texas A&M University System was officially established in 1948 and has evolved into one of the largest systems of higher education in the nation, with a statewide network of 11 universities, including our flagship, Texas A&M University, and ten regional universities across the state. Additionally, the A&M System provides service and education to the people of Texas and beyond through eight state agencies and a System administration office.

Each of the A&M System members has its own unique mission, history and goals. Together, they provide research, educational programs and community enhancement services that improve the lives of people in Texas and around the world.

A&M System universities educate over 153,00 students and make more than 23 million additional educational contacts through service and outreach programs each year.

With more than 26,000 faculty and staff positions, the A&M System has a physical presence in 250 of the state's 254 counties and a programmatic presence in every county. The A&M System has real property holdings totaling more than 62,000 surface acres and 65,000 mineral acres. System-wide, externally funded research expenditures exceed \$1.2 billion to help drive the state's economy.

The A&M System, with a total operating budget of \$7.2 billion, is governed by a nine-member Board of Regents. A nonvoting student member was added in 2006. The regents appoint the chancellor, the chief executive officer who oversees the direction and operation of the System. The System's role is governed by the state's education code, Title 3, chiefly Ch. 51, Sec. 51.353 and Ch. 85, Sec. 85.17.

### Universities

Texas A&M University  
 Prairie View A&M University  
 Tarleton State University  
 Texas A&M International University  
 Texas A&M University-Corpus Christi  
 Texas A&M University-Kingsville  
 West Texas A&M University  
 Texas A&M University-Commerce  
 Texas A&M University-Texarkana  
 Texas A&M University-Central Texas  
 Texas A&M University-San Antonio

### Agencies

Texas A&M Agrilife Research  
 Texas A&M Engineering Experiment Station  
 Texas A&M Agrilife Extension Service  
 Texas A&M Forest Service  
 Texas A&M Engineering Extension Service  
 Texas A&M Transportation Institute  
 Texas Division of Emergency Management  
 Texas A&M Veterinary Medical Diagnostic Laboratory

(Source: The Texas A&M University System FACTS 2023)

Chapter 16: Addendum  
Imperatives & Goals – Specific Project Examples:

1. Defense Research Support:
  - Cybersecurity Resiliency,
  - Aviation Security,
  - Mission Command Predictors of Success,
  - AI / ML / Deep Learning Integration,
  - Autonomous Vehicles Support,
  - Maneuver and Support Autonomy (Solar Fabric / Skin Support)\*,
2. Alternative Energy Research Support:
  - Maneuver and Support Autonomy (Solar Fabric / Skin Support)\*,
  - Smart Grid Connections,
  - PV Panel Efficiency,
  - Solar Farm Management,
  - Balance of Systems (Solar, Wind, Geothermal)
3. Cybersecurity Research Support:
  - Internet of Things Security
  - Chip Security
  - Hardware-Software Connection Security
  - Ethics of AI / ML / Deep Learning
  - Big Data / Causal Analytics with ML
4. Healthcare Research Support:
  - PTSD Triggers
  - PTSD Support
  - Acute Care Management
  - Nursing Management
  - Long Term Care Management: NAB Licensure and Cognitive Care Education
5. Data Analytics Research Support:
  - AI / ML / Deep Learning with Predictive Analytics
  - Data Analytics Big Data Research
  - Data Analytics System of Systems Research
  - Causal Analytics Program (Enhancement)
  - Continuing Education Data Analytics Program (Enhancement)
6. Education and Archives Research Support:
  - Boyer Based Education Research (Teaching Research Enhancement)
  - Bloom et al., Education Research (Typology / Taxonomy Creation)
  - Imperatives 1 to 5 Research Project Education (See above projects with education focus)
  - Archives Research (Military Focus e.g., General Shoemaker Archives Enhancement)
  - Archives Management Research



Chapter 16: Addendum  
Imperatives & Goals – Specific Project Examples:  
(Continued)

7. Full A&M University-Central Texas Curriculum Research Support
  - College of Arts & Sciences Faculty Based Research
    - Film Studies and PTSD (Premier Film Showing in Research Coliseum)
    - Music Research (Band Premier Concerts in Research Coliseum)
    - Immersive Virtual Reality Education (IVRE) (VR Workshop in Revolutionary & Civil War Engagements in Research Coliseum)
    - IVRE Workshop in Russian-Ukrainian History (VR Walk Through History of Soviet Union to Current Russia)
    - Aviation Research on Electric Engine Support (Fixed and Rotary Wing)
  - College of Business Administration Faculty Based Research
    - Semiconductor Research at Molecular / Electron Level (With Scanning Electron Microscopes)
    - Scatology Research in Healthcare
    - Transportation Support with Autonomous Vehicles (Collaboration with RELLIS)
    - Medical Imaging Deep Learning with MRIs, PETs, SPETs
    - Business Sustainability at the International Level with Green Technology Research
  - College of Education and Human Development
    - History of Education K-12 (VR Walk Through Education from One-Room School House to Present)
    - Faculty-Student High Impact Practices (VR Walk Through Education from Passive to High Impact Active Participation Education)
    - Technology in Education (VR Walk Through Education Technology PK-24)
    - PTSD Triggers in Educational Settings
    - Military Transition Program (MTP) for All DoD Branches: Enlarging Education, Workforce Development, and Healthcare for “Transition for Life” – Using Traditional and VR for Simulation and Current Practice Enhancements

OLDCC Grant Advisor Organization – Perkins & Will – Reports: Available at the following:

1. Summary Report at: <https://www.tamuct.edu/research/docs/Forge-TAMUCT-SummaryReport2.pdf>
2. Appendix: <https://www.tamuct.edu/research/docs/Forge-TAMUCT-ReportAppendix.pdf>
3. Advisory Committee: [https://www.tamuct.edu/research/docs/TAMUCT\\_RP\\_AdvisoryComm\\_2022-12\\_12.pdf](https://www.tamuct.edu/research/docs/TAMUCT_RP_AdvisoryComm_2022-12_12.pdf)