

2017-2023 Texas State University Plan

2018-2019 Plan Progress

College/Unit/Division: College of Science & Engineering

1. Promote the success of all students.

1.1 Plan and implement activities aimed at improving the overall student experience and satisfaction.

- Number of students in the current year involved in curricular and co-curricular activities that indicate high levels of satisfaction or have received special recognitions
- Number of students in the current year involved in activities aimed at improving student experiences
- Number of TxState Mobile Application downloads in the current year
- Number of interactions with the TxState Mobile Application in the current year
- Number and total cost of NEW campus enhancement projects completed
- Number of NEW voluntary meal plans purchased by students
- Increase in total dining and vending sales volume compared to prior year
- Increase in bookstore sales volume other than course materials compared to prior year
- Decrease in percentage of students cancelled for non-payment by payment due date compared to prior year

1.2 Manage student enrollment, both at the graduate and undergraduate level.

- Graduate and undergraduate enrollment figures compared to prior year

1.3 Increase student retention and graduation rates.

- Student retention rates for all levels (i.e., first-time undergraduate, transfer undergraduate, first-time master's, first-time professional, and first-time doctoral) compared to prior year
- Student graduation rates for all levels (i.e., first-time undergraduate, transfer undergraduate, first-time master's, first-time professional, and first-time doctoral) compared to prior year
- Student retention rate increases in academic or support services department-identified retention programs for the current year

Mathematics-During 2018-2019 the Department of Mathematics fully implemented co-requisite teaching for all students enrolled in MATH 1311 (a developmental

class). This allowed approximately 50% of developmental students the opportunity to complete a credit bearing mathematics course in their first semester who would otherwise have been delayed in taking the credit bearing course. Earlier completion of a credit bearing mathematics course has been shown to have a positive impact on degree completion and retention. We also piloted co-enrollment for MATH 1300 students and significantly increased space for our Math Cats tutoring program.

CS-CS is engaged in an on-going NCWIT sponsored project to retain female students in computer science.

Chemistry-Chem/Biochem piloted a program that made SI attendance mandatory for all general chemistry class. Preliminary results suggest fewer D, F, W's in the Gen Chem II classes when compared with previous semesters.

Physics- Retention in Learning Assistant supported physics classes continues to improve. Data analysis is proceeding with the objective of a future journal publication.

1.4 Increase scholarship and grant resources to enhance recruitment, retention and graduation of students.

- Number and dollar amount of NEW and total scholarships awarded, including merit scholarships
- Number and total dollar amount of all grant resources for the current year

1.5 Enhance advising, academic support programs and services to ensure student success.

- Undergraduate student to academic advisor ratios at university and college level compared to prior year
- Number of students served by advising centers compared to prior year
- Number of students served by the Student Learning Assistance Center compared to prior year
- Number of students served by the Writing Center compared to prior year
- Number of NEW programs/activities and number of participants that ensure student success (provide one example)

Mathematics-We began a new initiative (related to HB 2223) to provide (in conjunction with the PACE center and academic coaches) information and individual advising/consultations for co-enrolled students not successful in passing their credit bearing mathematics class. Information provided included specific recommendations on how to improve the outcome when repeating the course. We also implemented mandatory tutoring for all students who did not pass the first exam in these courses to improve the likelihood that the student would pass the course.

1.6 Ensure marketable skills are incorporated into curricular and co-curricular experiences.

- Number of academic programs for which marketable skills have been identified compared to prior year
- Number of continuing education courses for which marketable skills have been identified compared to prior year
- Number of NEW curricular and co-curricular programs and experiences that have incorporated marketable skills components in the current year

Mathematics-The Department developed marketable skills lists for all of its academic programs.

CS-The Department is engaged in an on-going NCWIT sponsored project to retain female students in computer science.

Biology-Developed marketable skills lists for 4 BS, 4MS and 1 PhD program.

Physics- Undergraduate physics curriculum integrates computation for simulation and data analysis. Major includes a new required class launched F19. Professional development course for undergraduate physics majors developed and started as a required class in F19.

1.7 Prepare all students to achieve their career goals and make positive and meaningful contributions as they interact in a diverse and increasingly global society through an inclusive program of learning and engagement, rich with diverse perspectives.

- Number of NEW career support programs provided and number of participants
- Number of academic credit internships/practica completed by students in the current year as measured by Semester Credit Hour (SCH) in sources as coded
- Number of face-to-face career counseling and career advising appointments for the current year
- Percentage of students in the current year who report employment or graduate/professional school plans in the Graduating Student Outcomes-First Destination survey

1.8 Provide educational programs and co-curricular activities that foster community, service learning, leadership, career exploration, and personal development.

- Number of NEW educational programs provided and total number of participants

Mathematics-The Department of Mathematics began to offer new concentrations at the master's level in Applied Mathematics and Statistics. There were 3 students in each program in Fall 2018, and there were 3 students in Applied Mathematics and 5 in Statistics in Spring 2019.

Physics- Professional Development course required for physics undergraduate majors. Continued expansion of support of science literacy through general education courses such as introductory astronomy (two courses)..

- Number of NEW co-curricular activities provided and total number of participants

Mathematics-At the request of some undergraduate students, a faculty member in our department agreed to be a faculty sponsor for a new club for gaming.

EngTech-1 co-curricular activity, 25 students - JE Dunn Build-Learn-Advance program at the Alkek Library, Spring 2019.

Physics- Professional Development course for physics undergraduate majors involves multiple co-curricular activities.

- Number of NEW course sections transformed or created with a service learning component

1.9 Leverage data and analytics to support growth in student success and institutional processes.

- Number of NEW enrollment management (e.g., recruitment, admissions, financial aid, retention) policies that result from the use of actionable data
- Number of NEW dashboards, data and analytical reports published

1.10 Establish the appropriate processes, procedures, and tools to support the necessary accommodations for constituents with disabilities.

- Number of students with disabilities participating in support programs and services in the current year
- Number of NEW electronic and/or physical ADA compliance processes, procedures and tools completed/available

1.11 Support the success of students by continuously improving the function, condition, reliability, and aesthetics of the facilities and grounds of the university.

- Number and total cost of NEW space repair and renovation projects completed
- Number and total cost of NEW campus enhancement projects completed
- Number of NEW or modified facilities construction and/or improvement projects in which the Department of Athletics was involved in collaborative planning, improving technology, and/or space utilization and optimization

1.12 Provide a supportive environment for students, including student athletes, that encourages academic excellence, character development, and respectful interaction with others.

- Academic progress rate (APR) of student-athletes for the current year compared to NCAA national average
- Student-athlete retention rates (i.e., first-time undergraduate, transfer undergraduate, first-time master's) compared to entire student body
- Student-athlete graduation rates (i.e., first-time undergraduate, transfer undergraduate, first-time master's) compared to entire student body
- Number of NEW or modified programming for student-athletes that encourage academic excellence, character development, and respectful interaction with others
- Number of NEW or modified programming for student-athletes that promote their emotional, physical, and intellectual well-being

1.13 Provide all students with quality engagement opportunities that model the values associated with equitable competition, engender university pride, positive community relations, institutional prestige, and promote student well-being and development.

- Number of service learning hours completed by students enrolled in service learning designated courses compared to prior year
- Number of NEW curricular and co-curricular programs/activities that provide students with quality engagement opportunities (provide one example)

N/A

- Number of student curricular and co-curricular competitions in the current year that receive special recognition

<p>CS student, Leander David, was selected to attend the 2019 NSF Secure and Trustworthy Cyberspace Principal Investigators' Meeting.</p> <p>CS student, Haydon Isler, in a multi-disciplinary team was named as a finalist in the Mitre Corporation's Eligibility Verification Challenge</p> <p>CS student, Samantha Hollensbe, in multi-disciplinary team won a \$1,000 award in the Microsoft Community Impact contest.</p>

<p>EngTec-1 student co-curricular competition: CSA (Construction Student Association) won Student Chapter of the Year in a national competition</p>
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<p>MSEC-8 MSEC students received a total of 16 awards during the 2018-2019 academic year:</p> <p>Adeniji Adetayo-Coalition of Black Faculty and Staff Academic Achievement Award, May 2019; Society of Plastics Engineers Achievement Award, April 2019; Phi Kappa Phi, Love of Learning Award, December 2018</p> <p>Tanjina Ahmed-MSEC Boot Camp II Team Award, Summer 2019</p> <p>Anival Ayala- MSEC Boot Camp I Team Award, Fall 2018; MSEC Boot Camp II Team Award, Summer 2019</p> <p>Michael Brenton Gildner--MSEC Boot Camp I Team Award, Fall 2018</p> <p>Harish Kallagunta-SAMPE 2019 Student International Leadership Experience</p>
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Award

**Shubha Malla-People's Choice Award, 3MT Preliminary Round (March, 28, 2019); People's Choice Award, 3MT University Final (April, 2, 2019)
Damilola Runsewe-MSEC Boot Camp Team I Award, Fall 2018; NASA Space Exploration Innovation Cash Award (Nabaco), April 2019
Texas Business Hall of Fame Best of Texas Prize (Nabaco), April 2019
MSEC Boot Camp II Team Award, Summer 2019; Outstanding MSEC Doctoral Student Award, Summer 2019
Tuhin Dey-MSEC Boot Camp Team I Award, Fall 2018**

- Number of students and their total service hours in the current year involved in verifiable community service activities
- Number of events held on Texas State campuses for the current year that provide opportunities for students to engage, through observation or participation, that model the values associated with equitable competition and engender university pride

2. Offer high quality academic and educational programming.

2.1 Introduce new academic programs that meet the economic and cultural needs of the region and the state.

- NEW academic programs proposed during the current academic year
- NEW academic programs approved during the current academic year
- Online and hybrid SCH as a percent of overall SCH offered

2.2 Provide quality educational programming that leverages diverse perspectives embedded in an inclusive learning environment.

- Number of NEW or modified academic programs that added multicultural or multi-perspective content

Mathematics-The Department of Mathematics created a new topics course under MATH 7378 that contains multicultural content.

Chem/Biochem hosted a business-themed REU during the summer.

Physics- PHYS 3320 was successfully redesigned and certified as Multicultural Perspective beginning F19. This brings to seven the total number of physics courses earning MULT or MULP distinction.

Second bullet below: Department diversity training carried out in full faculty meeting.

- Number of NEW or revised courses with multicultural or multi-perspective content

- Number of educational or training sessions held in the current year for members or groups within the Texas State campus community that contain information concerning the value of diverse perspectives

2.3 Enhance and expand the Honors College experience to attract high-achieving students.

- Number and percent of students enrolled in Honors College courses offered compared to prior year
- Percent of students in each college participating in the Honors College compared to prior year
- Number of NEW Honors sections offered
- Number of Honors College graduates compared to prior year

2.4 Improve the capabilities in our learning spaces and learning environments to better foster creativity, enable collaboration, and encourage discovery.

- Number of NEW programs/activities that improve capabilities in the learning environment (provide one example)
- Number of NEW programs/activities that improve capabilities in online learning environments
- Number, percentage, and capacity of active classrooms
- Number and capacity of diverse learning environments in the university libraries
- Number and total cost of NEW classroom and teaching laboratory enhancement projects

2.5 Transition Texas State's Learning Management System environment to a more integrated, robust, and modern integrated learning system.

- Number of NEW transitional learning management system (LMS) activities implemented
- Percentage of courses being taught in the new LMS

2.6 Support the growing academic requirements of the university by improving the condition and reliability of academic facilities and technology, creatively assisting departments in optimizing their use of space, and collaboratively planning and constructing new facilities.

- Number and total cost of NEW capital projects resulting in square footage additions coded as "Academic"
- Number of NEW technology initiatives implemented during the current year and total cost
- Percentage of classrooms upgraded technologically for the current year
- Average age of computers in computer labs (includes learning commons)

2.7 Increase national and international visibility and presence by supporting curricular and co-curricular initiatives that prepare students to be responsible citizens.

- Number of faculty-led study abroad programs for the current year
- Number of students studying abroad for the current year
- Number of NEW institutionally-recognized international exchange programs
- Number of students participating in Study-in-America for the current year
- Number of NEW curricular and co-curricular service learning programs that prepare students to be responsible citizens (provide one example)
- Number of students participating in NEW global immersion programs

3. Achieve significant progress in research and creative activity as measured by national standards.

3.1 Achieve National Research University Fund (NRUF) Eligibility.

- Total restricted research expenditures
- Total endowment funds
- Number of Ph.D. degrees awarded
- 5-year master's graduation rate
- 10-year doctoral graduation rate
- Percent of first-time entering freshman class in top 25 percent of high school class
- Status as member of Association of Research Library membership, Phi Beta Kappa Chapter, or Phi Kappa Phi Chapter
- Association of Research Libraries (ARL) Library Investment Index ranking
- Number of tenured/tenure-track faculty who have achieved international and national distinction through recognition as a member of one of the national academies, are Nobel Prize recipients, and have received other faculty awards as designated in the NRUF eligibility criteria

Mathematics-Dr. Jennifer Czocher received a CAREER award. A second faculty member, Dr. Chunmei Wang also received a CAREER award but has since left the University.

- Number of Ph.D. programs

3.2 Develop new graduate programs to advance the university's research goals.

- Number of NEW graduate programs proposed during the current year
- Number of NEW graduate programs approved during the current year
- Number of graduate students enrolled compared to prior year
- Number of graduate degrees awarded compared to prior year

3.3 Encourage and promote student research opportunities.

- Number of NEW curricular and co-curricular programs that provide students with research opportunities (provide one example)

Chem/Biochem hosted a business-themed REU during the summer.

Physics- Physics Professional Development course includes instruction for engaging in department research, external Research Experience for Undergraduates programs, and corporate internships.

Computer Science hosted a new REU investigating smart and connected communities.

- Number of students participating in the Undergraduate Research Conference and Honors Thesis Forum compared to prior year
- Number of graduate students completing thesis or dissertation projects compared to prior year

3.4 Expand support to the research community by enhancing resources to support the evolving requirements while developing a staff of research professionals to support and assist researchers.

- Total research and development expenditures
- Number of proposals developed with the assistance of Research and Sponsored Programs staff and grant writing contractors compared to prior year
- Total number and utilization of High Performance Computing (HPC) nodes
- Number of technology mitigation plans for research grants
- Number of NEW research job postings along with average time to fill
- Number and total cost of NEW capital projects resulting in square footage additions coded as “Research”
- Increase in number of research-specific Environmental Health, Safety and Risk Management training courses taught compared to prior year (including attendance)
- Decrease in the number of lab safety inspection violations compared to prior year

3.5 Foster a university-wide culture that promotes, rewards, and celebrates interdisciplinary research, scholarship, creative activity, innovation, and community engagement.

- Number of applications for Multidisciplinary Internal Research Grants (MIRG) compared to prior year

4. Provide the necessary services, resources, and infrastructure to support the university's strategic direction.

4.1 Offer competitive salaries to attract and retain highly qualified faculty and staff.

- Median salary levels for each faculty rank including professor, associate professor, assistant professor, and lecturer
- Percent increase in average staff salary levels for all ranks
- Comparison of median salary by position at Texas State with median salary in the local market for staff and to CUPA-HR national data or appropriate peer set for faculty
- Percentage of positions with an identified market benchmark

4.2 Plan and implement programs to help improve faculty and staff recruitment, hiring, and retention in order to support a highly qualified, diverse, motivated, and satisfied workforce.

- Number of NEW programs and activities that provide assistance in strengthening faculty/staff recruitment, hiring, and retention
- Number and percent of African American, Hispanic, and other diverse faculty and staff compared to prior year
- Annual turnover percentage of regular faculty and staff (by title, FLSA classification, years of service, age, diversity, division)
- Number of online recruitment advertisements of job postings and advertising sources for the current year
- Number of applications received for staff positions (total, per posting, and average by FLSA classification) for the current year
- Time to fill a staff position (overall and by division, FLSA classification) for the current year
- Time to complete staff new position and reclassification job audits for the current year
- Percentage of Performance Management assessments completed by annual May 31 due date
- Number of WellCats members, events, and participation for the current year

4.3 Promote excellence through effective planning, policy development, assessment, and reporting to ensure the continuous improvement of programs and services.

- Number of involvement and contribution levels in annual plan progress reporting
- Number of university and division policies that are current/delinquent
- Number of NEW policies developed or updated
- Number of responsible areas that are completing assessments and demonstrating continuous improvement for the current year

- Number of administrative peer reviews conducted for the current year
- Number of program reviews completed/submitted to the Texas Higher Education Coordinating Board for the current year
- Number of required major state and national reports completed and submitted for the current year

4.4 Implement fundraising initiatives in support of the university's strategic direction.

- Total dollar amount raised for the current year
- Total dollar amount raised per strategic fundraising priority area

4.5 Provide training and educational resources to enhance personal and community safety.

- Number of NEW safety support activities introduced
- Number of NEW educational activities related to applicable laws (e.g., Title IX, Campus Save Act, Violence Against Women Act)

4.6 Enhance information security practices to better predict, prevent, detect, and respond to threats to Texas State's information systems and data.

- Number of security breaches in the current year
- Number of applications using Two Factor Authentication
- Number of reported security incidents for the current year

4.7 Continue to improve strategies and models for governance and planning that are transparent and inclusive.

- List of NEW published models or processes to support governance and planning decisions

4.8 Expand Round Rock Campus resources and space to support the move of the College of Health Professions and growth of other academic offerings at this location.

- List of NEW capital projects completed at Round Rock Campus and total cost
- Dining and vending sales volume at Round Rock Campus compared to prior year
- Number of NEW non-faculty positions added at Round Rock Campus
- Number and total cost of NEW technology initiatives implemented at Round Rock Campus during the current year
- Total technology expenditures for the current year at Round Rock Campus

4.9 Increase the utilization and effectiveness of available technologies through more impactful implementations, education, training, marketing, and communications.

- Number of IT-related communication and marketing events for the current year
- Adoption rates of new technology implementations/upgrades

4.10 Enhance the experience of the university community by continuously improving processes and interfaces.

- Number of NEW campus business improvements
- Number of electronic documents processed through Adobe Sign
- Number of NEW functionalities implemented via mobile technology
- Number of NEW cloud solutions vetted and approved
- Increase in percentage of employees signed up to receive electronic W-2s compared to prior year
- Decrease in percentage of Outstanding Charges Receivable compared to prior year
- Increase in number of vendors in the TSUS Marketplace compared to prior year
- Increase in percentage of automatically paid invoices using 2-way match compared to prior year
- Increase in utilization of Concur Travel Management tools compared to prior year

4.11 Provide a diverse and inclusive environment of support to achieve the highest level of performance for all members of the campus community.

- Number and percent of ethnically diverse faculty and staff compared to prior year
- Number of NEW cultural and diversity programs

4.12 Effectively engage alumni and external constituents to influence and generate human and financial capital opportunities.

- Number of NEW external constituent outreach (parents, families, business) activities and number of participants

Mathematics-Mathworks celebrated its 30th anniversary with an event designed to engage alumni and external constituents and to capitalize on the event to increase its endowments. There were approximately 200 participants.

Computer Science-CS faculty (Drs. Ziliang Zong and Apan Qasem) hosted the NSF Cloud and Autonomic Computing Summit & Center Meeting in San Marcos, TX and involved about 70 participants from NSF, Austin Chamber of Commerce, and local industry.

Physics-Inaugural year of Griffin Outreach Grant program for engaging students in proposal writing and outreach activities.

CoSE hosted an open house with STEM activities in March 2019.

- Number and percent of alumni (undergraduate degree holders) donating to Texas State compared to prior year
- Number and percent of recent (graduated within last five years) alumni donating to Texas State compared to prior year
- Number of NEW alumni achievement awards for the current year
- Number of NEW Alumni Association sponsored and co-sponsored events and number of participants
- Number of NEW recognized alumni chapters
- Number of NEW alumni chapter-hosted events and number of participants

4.13 Provide programs and services that support and enhance the health and wellness of the university community.

- Number of NEW student health and wellness activities provided and number of participants

N/A

- Number of NEW faculty and staff health and wellness activities provided and number of participants
- Employee Assistance Program utilization rate compared to prior year

4.14 Provide a competitive, high-profile, diverse, equitable athletics program, in compliance with applicable rules and regulations, which increases university prestige and creates exciting engagement opportunities.

- Number of NCAA Division I events held for the current year that provided engagement opportunities for faculty, staff, students, alumni, and the community-at-large

4.15 Support the growing requirements of the university by enhancing the condition and reliability of the university infrastructure, creating redundancy to support essential building operating systems, and collaboratively planning and constructing new facilities.

- Number of deferred maintenance projects completed for the current year and total cost
- Number and total cost of NEW infrastructure repair and renovation projects completed
- Total square footage of NEW construction or additions completed
- Percentage of data switches less than five years old
- Percentage of servers in the data center running under virtual machines