

Texas A&M Grand Challenge Scholars Program

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<http://engineering.tamu.edu/gcsp>



ENGINEERING
TEXAS A&M UNIVERSITY

Program Description

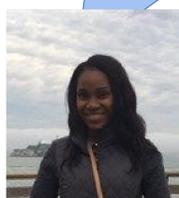
Our Vision

Attract, retain and graduate future engineering world leaders in academe, government and industry who are equipped to engineer solutions to grand challenges facing the global community

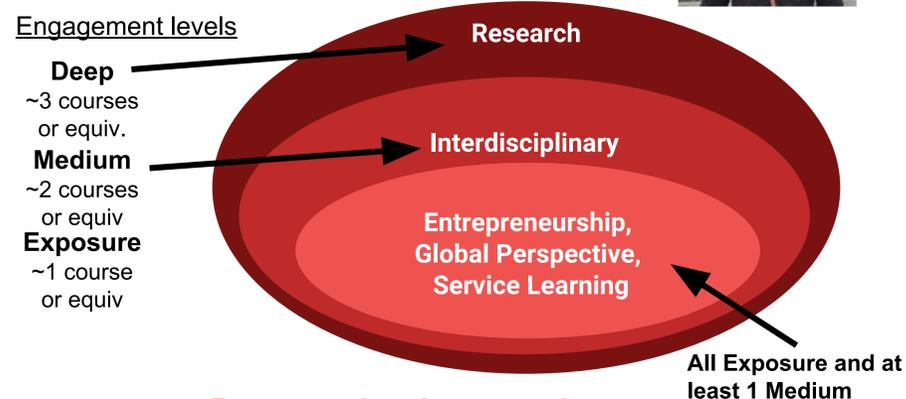
GCSP at Texas A&M

The Texas A&M Grand Challenge Scholars Program (GCSP) is a selective, three-year program that students begin in their sophomore year. The cornerstone of the program is a thesis on a research topic related to one of the Grand Challenges completed under the guidance of a faculty mentor. Each student designs a customized curriculum integrating their GCSP research with the other GCSP components.

"Today, unlike the first time I was asked what I wanted to be, I know without a shadow of a doubt that I want to contribute to the life saving efforts of the world through engineering. I know that I want to be an influential chemical engineer in my time and becoming a part of the Grand Challenge Scholars Program is one of the many achievements I look forward to." - Agnes Aina, Chemical Eng, Class of 2019



Program Components



Program Implementation

The Texas A&M GCSP is designed to be an individualized, self-directed program, while still creating a sense of community and engagement among the GCSP scholars. Scholars:

- Participate in monthly GCSP activities
- Present at Annual GCSP Symposium each spring
- Meet each semester with GCSP Director
- Submit an annual report and maintain a 3.25 GPA

Eligibility and Application

The Texas A&M GCSP is open to all sophomores majoring in engineering with a 3.25 GPA.

The online application is completed early in the fall of the sophomore year and includes:

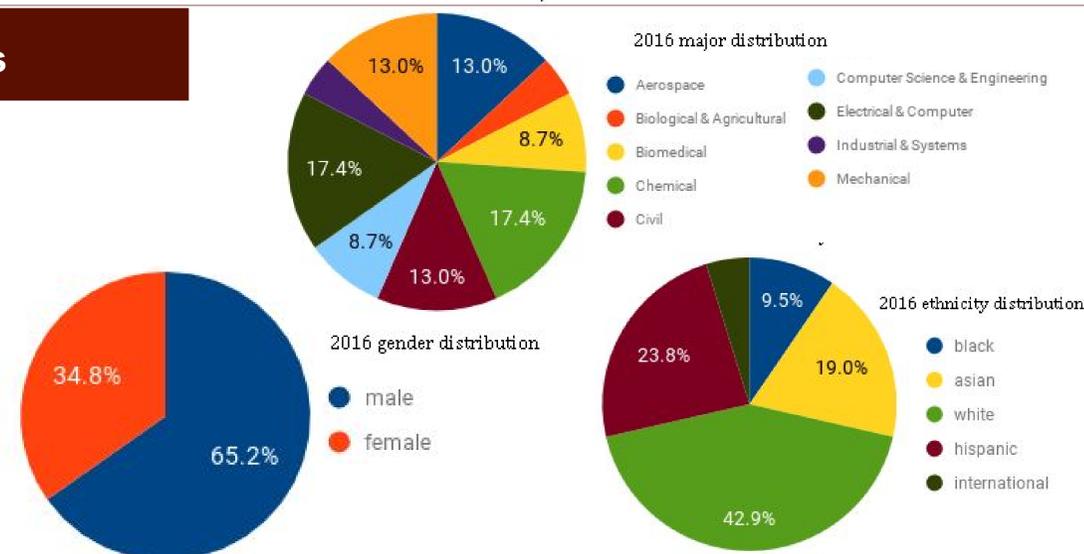
- Essay detailing interest in the program
- Letter of reference

Texas A&M GCSP Scholars

- The first cohort, enrolled in Fall 2016, included 23 sophomores and juniors from 9 majors.
- The second cohort is currently forming and so far includes 17 sophomores from 10 majors.



Texas A&M GCSP 2016 Cohort



Research and Interdisciplinary

Texas A&M GCSP Scholars complete a substantive research experience related to one of the Grand Challenges and document it in a thesis. This is the cornerstone of the program and requires a "Deep" level of engagement (the equivalent of three courses), which includes the research and writing of the thesis, as well as the presentation of the work in both scientific and outreach events.

The program also requires a significant level of interdisciplinary involvement with a "Medium" level of engagement (the equivalent of two courses).

- most scholars achieve this with their thesis work
- many scholars participate in other project-based courses such as the Aggie Challenge and EPICS that are explicitly interdisciplinary

"I have co-authored in a paper about Welding of 3D Printed Parts, published in Science Advances. I have a second co-authorship on a paper which has been submitted and under review" - Victoria Hicks, Chemical Eng, Class of 2019



"I led a 6 person (from different engineering majors) team in VEX U robotics competition, tasked with creating EasyC code for autonomous parts." - Ricci Seguban, Chemical Eng, Class of 2019



Entrepreneurship

Texas A&M GCSP Scholars have numerous opportunities, both curricular and extra-curricular, to study and practice entrepreneurship in a hands-on way.

- Aggies Invent, Startup Aggieland, TAMUHack
- Entrepreneurship courses, certificates or minors

Global Perspective

Texas A&M Engineering has a strong focus on providing global opportunities for students, including a diverse range of opportunities and financial support for students that need it.

- mini-mester, summer, and traditional study abroad opportunities
- Engineers without Borders, Engineering International Certificate

Service Learning

Texas A&M has service in its DNA, and Texas A&M GCSP Scholars have many options to integrate service learning into their GCSP curriculum

- Big Event - the largest, one-day, student-run service project in the nation
- EPICS, Engineers Serving the Community, Peer Teaching

"I was a Stanford University Innovation Fellow and an organizer for TAMUHack" - Jusung Lee, Computer Science, Class of 2019



"My travels to a small rural village in Nicaragua (part of Engineers without Borders program) was a very eye-opening experience to see the lack of resources in some parts of the world." - Brian Welsh, Civil Eng, Class of 2018



"As a SWE officer, I was involved with the community outreach committee in SWElites. I helped in planning of Bel Inizio: Race for a Better Life and STEMfest, an event to inspire girls to enter STEM fields" - Millie Kriel, Electrical Eng, Class of 2019



"I have mentored middle-school and high-school students on interesting problems and topics in Mathematics which encouraged them to become passionate about the subject." - Hector Linares Garcia, Biomedical Eng, Class of 2019

