

RESEARCH FACULTY ADVISORS

The National Academy of Engineering (NAE) identified **14 Grand Challenges for Engineering** in the 21st Century. The challenges represent matters affecting quality of life, and address larger issues related to **security, health, and sustainability**.

In March 2018, SMU joined over 70 engineering schools to support the NAE's Grand Challenges Scholars Program.

By tackling a Grand Challenge, student scholars will learn to solve problems through investigation, technical inquiry and develop an understanding of the scientific process. Student's research is enriched through multi-disciplinary study and engagement with industry and the global community.

Each challenge falls into one of these **4 categories**:



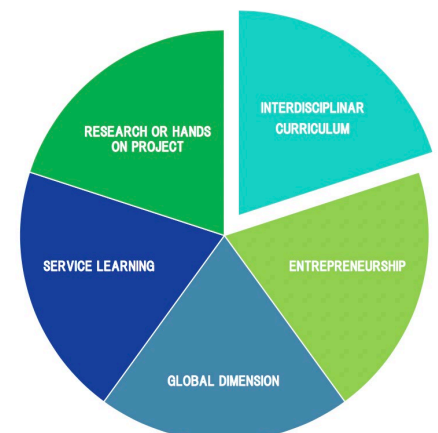
The **14 challenges** are the following:



HELP STUDENTS DESIGN & CONDUCT UNIQUE RESEARCH

Students work closely with SMU faculty to implement a research portfolio while an industry mentor assists with identifying appropriate internships, volunteer opportunities and entrepreneurial activities.

Upon **completion of their Grand Challenge Portfolio**, students qualify to **graduate with distinction** and receive recognition from the National Academy of Engineering.



RESEARCH FACULTY ADVISORS

Research faculty advisors work with students who have been accepted into the Grand Challenge Program, to oversee the progression of their research. Faculty will guide students in their chosen Grand Challenge, providing support, advice and scientific understanding to ensure students complete research in the time allotted.

FACULTY ADVISORS PROFILE

- Resourceful and willing to work on behalf of students
- Knowledgeable in student's chosen Grand Challenges Domain
- Time to meet / talk with students on a regular basis throughout their research
- Space, supplies and equipment for students to conduct research

FACULTY ADVISORS ROLE

- Meet with students to brainstorm ideas
- Develop research agenda
- Help students conduct accurate and thorough research
- Support student's research and academic development
 - Review research
 - Review portfolio
 - Ensure research is completed
- Ensure that students fulfill all program requirements

FACULTY ADVISORS REQUIREMENTS

- Commit to two to three years of working with a student
- Attend Faculty Orientation
- Review GCSP portfolio requirements
- Meet with students regularly

GRAND CHALLENGE RESEARCH REQUIREMENTS

- Comprehensive research project must be approved by the Grand Challenges Steering Committee
- Research must be complete and delivered to the public in a tangible form such as:
 - Poster presentation at Lyle or the University's Research Days
 - Submission to the SMU Journal of Undergraduate Research or submission to a peer reviewed journal

Grand Challenge Scholars also have exclusive access to **Speaker Series** with industry guest speakers and **Student Seminars!**

For questions or concerns as a Faculty Member, contact:

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