In 2008, The National Academy of Engineering (NAE) identified 14 Grand Challenges for Engineering in the 21st Century. The 14 Grand Challenges represent matters affecting quality of life. These societal impacts, address larger issues related to **security, health, education and the environment**. In March 2018, SMU joined approximately 50 Engineering Schools to support students’ pursuit of building a portfolio of research and related courses and activities focused on a Grand Challenge of their choosing. By taking on a Grand Challenge, students learn to solve problems based on thorough investigation and technical inquiry. Their research is enriched through multi-disciplinary study and by working in industry and the community.

**Students identify a problem related to a Grand Challenge**

Help students design and conduct unique research

**Students work closely with SMU faculty to implement a research agenda** 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 Domains (health, security, energy and education)
- 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 or three years of working with a student
- Attend an orientation
  - Meet student’s Grand Challenges Industry Mentor
  - Review portfolio requirements
- Meet with students regularly

Grand Challenge Research Requirements
- The comprehensive research project must be approved by the Grand Challenges Steering Committee
- Research must also be complete and delivered to the public in a tangible form such as:
  - Presentation at Lyle and the University’s Research Days
  - Submission to the SMU Journal of Undergraduate Research
  - Submit manuscript to a peer reviewed journal

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214-768-3033 with questions.