GRAND CHALLENGE SCHOLARS

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 thorough 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:

- ENERGY & ENVIRONMENT
- SECURITY
- HEALTH
- Quality of Life

The 14 challenges are the following:

- Advance Personalized Learning
- Enhance Virtual Reality
- Engineer Better Medicines
- Restore and Improve Urban Infrastructure
- Provide Access to Clean Water
- Manage the Nitrogen Cycle
- Develop Carbon Sequestration Methods
- Prevent Nuclear Terror
- Make Solar Energy Economical
- Reverse Engineer the Brain
- Advance Health Informatics
- Secure Cyberspace
- Provide Energy from Fusion
- Engineer the Tools of Scientific Discovery

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.
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Scholars along with the guidance of a faculty research advisor, an Industry Mentor, will design and complete research around one of the Grand Challenges and compile a portfolio over the course of their undergraduate career.

GCS REQUIREMENTS TO APPLY

- Have a minimum of 50 credit hours remaining in degree plan
- Student must be in good academic and conduct standing
- Must be disciplined, proactive and have scientific curiosity
- Students must be willing to dedicate a large portion of their time to working on their Grand Challenges Portfolio
- Applications will be due early in October

GCS REQUIREMENTS TO COMPLETE PORTFOLIO

- Enroll in a KNW class, a community engagement class, nine hours of broadening courses, one entrepreneurship class, and one globally focused class
- Attend Grand Challenges seminar series and an entrepreneurship seminar
- Participate in service learning or go abroad for class/work
- One semester internship/co-op at a start-up or start a new venture
- Complete two service-learning activities
- Complete Grand Challenge research project and present to an audience

RESOURCES AVAILABLE TO GCS

- Advisors
  - Faculty research advisor
  - Grand Challenges Industry Mentor
- Hart Center for Engineering Leadership
  - Knowledgeable staff
  - Networking opportunities
- Research Funding up to $2,000
- Fully funded trips to D.C and abroad
- Access to the Scholars’ Den

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

For questions or concerns contact:
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