



Grand Challenge Scholars Program

The Grand Challenge Scholars Program is a prestigious and nationally recognized program originally created by the National Academies to prepare engineering and science students with the knowledge and skills necessary to address global concerns in the 21st century.

The program challenges students to create innovative and inter-disciplinary solutions to these designated problems through a personally planned curriculum focusing on both the chosen challenge and the 5 elements of the GCSP:

- **Talent Competency:** mentored research/creative experience on a Grand Challenge-like topic
- **Multidisciplinary Competency:** understanding multidisciplinary of engineering systems solutions developed through personal engagement
- **Viable Business/Entrepreneurship Competency:** understanding, preferably developed through experience, of the necessity of a viable business model for solution implementation
- **Multicultural Competency:** understanding different cultures, preferably through multicultural experiences, to ensure cultural acceptance of proposed engineering solutions
- **Social Consciousness Competency:** understanding that the engineering solutions should primarily serve people and society reflecting social consciousness

Upon completion of this program during their senior year, students will not only be well-rounded engineering graduates, but will also have a designation as a Grand Challenge Scholar. The National Academy of Engineering designates their status as Grand Challenge Scholars on its website. The final submission of a GCSP portfolio in the final year outlining how the students achieved their original goal marks the completion of the GCSP. Both professional organizations and graduate institutions recognize this achievement in academia and appreciate the perspective it gives its members.

At their graduation, students will get special recognition for this achievement and get special regalia to wear during the ceremony to showcase this achievement.



The National Academy of Engineering endorses the NAE Grand Challenge Scholars Program. Engineering skills and leadership are essential to meeting the great challenges facing humankind. This program will build a cadre of young men and women who not only have the necessary engineering skills but also the cross-disciplinary knowledge, entrepreneurial spirit, global perspective and sense of mission needed to serve and lead this country.

Charles Vest, President
National Academy of Engineering





14 KEY CHALLENGES

Aspirational vision of what engineering needs to deliver to all people on the planet in the 21st century: "Continuation of life on the planet, making our world more sustainable, secure, healthy, and joyful."

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

Starting the Grand Challenge Scholars Program:

1. Be an engineering student at the sophomore level with 30 semester hours completed in a program of study and cumulative GPA of 3.0 or higher.
2. Build a GCSP Plan of Study and Research Plan with Faculty Mentor and have it approved by GCSP Director and Steering Committee.

Plan of Study Available on GCSP Webpage at parks.slu.edu

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