# Centers, Institutes, and Special Programs

## BioInnovation and Design Lab

## BioInnovation and Design Lab was established in 2017 as an on-campus hub for authentic industry-focused biomedical engineering design and innovation projects. The Lab prepares students from engineering, sciences, and business to apply design-thinking and entrepreneurial skills, and empowers them to discover, innovate, and address complex challenges in healthcare. The Lab partners with bioengineering companies and medical organizations to engage over 50 students and 10 faculty a year through externally sponsored projects, co-/extracurricular activities, and other professional development opportunities. Examples of projects include: automated image analysis, prosthetics for emerging markets, and market research for new medical products and services.

## Center for Nanostructures

The Center for Nanostructures uses state-of-the-art equipment to educate students and to advance the field of nanoscale science and technology. The mission of the center is to conduct, promote, and nurture nanoscale science and technology, interdisciplinary research, and education activities at the University, and to position the University as a national center of innovation in nanoscience education and nanostructures research. Ongoing research projects include On-Chip Interconnect Modeling, Carbon Nanotubes/Nanofibers, and Electrical/Biological System Interfaces. Faculty, graduate students, and undergraduate students utilize the center for research projects.

## Combined Bachelor of Science and Master of Science

Bachelor of science degree programs offered by the Departments of: Bioengineering; Civil, Environmental and Sustainable Engineering; Computer Science and Engineering; Electrical and Computer Engineering; and Mechanical Engineering can be combined with any master of science degree offered by the School of Engineering. Requirements for the combined degree programs are outlined in the appropriate departmental sections of this chapter.

## Cooperative Education Program

The Cooperative Education Program integrates classroom work with practical experience by providing alternate or parallel periods of college education with periods of training in industry or government. The objective of the program is to provide students the opportunity to enhance their academic knowledge, to further their professional development, and to learn how to work effectively as individual contributors and group members. The industrial training is related to the student’s field of study and often is diversified to afford a wide range of experience. To qualify for the program, undergraduate students must have completed at least 90 quarter units and have a grade point average of 2.5 or higher. Credits earned in the program may be used to meet undergraduate degree requirements.

## Frugal Innovation Hub

Sponsored by the School of Engineering, the Frugal Innovation Hub (FIH) offers an interdisciplinary platform for the design and implementation of innovative technology for social benefit by fostering collaboration between students and faculty from universities worldwide, multinational corporations, social enterprises, nonprofits, and foundations. Through undergraduate and graduate courses, innovation projects, and immersion experiences, SCU students have the opportunity to develop technologies, products, and solutions to address real-world human needs in underserved markets domestically and internationally. Focus areas include clean energy, global public health, mobile technologies, sustainable livelihood development, and clean water.

## The Grand Challenge Scholars Program

The SCU Grand Challenge Scholars Program combines opportunities to engage, understand and help [address the grand challenges facing society](http://www.engineeringchallenges.org/cms/challenges.aspx), while inspiring innovative ideas and designs that will help people around the world achieve a higher standard of living and quality of life. Through completion of the five components of the program, students will have the opportunity to engage in research relating to their selected grand challenge, explore interdisciplinary coursework, gain an international perspective, engage in entrepreneurship, and give back to the community through service learning. SCU Engineering students who complete the program will achieve the distinction of Grand Challenge Scholar, endorsed by both SCU and the [National Academy of Engineering](http://www.nae.edu/) (NAE), and will be uniquely prepared to collaborate and succeed in a transdisciplinary and global environment. More information is provided in the General Engineering section of this chapter.