SCSE Strategic Plan

The Swenson College of Science and Engineering has an overarching goal of providing a quality environment to support the SCSE community (students, staff, and faculty) in leading efforts to benefit the world through science, math, engineering, and transdisciplinary work branching into these fields. Inherent in this environment is a climate of inclusion and diversity, support of teaching and research infrastructure, a commitment to continued support of established programs, and service to society. Goals within the three core areas of SCSE are given below.

Undergraduate Program
SCSE will continue its nationally recognized leadership in providing close student-faculty interaction in teaching, advising, and undergraduate research opportunities. The strong undergraduate academic and research programs will be highlighted through increased publicity to current students, prospective students and to the public. SCSE provides a unique opportunity to redefine boundaries between science, math and engineering disciplines. Students and faculty will be encouraged to continue development of interdisciplinary efforts in these areas, as well as efforts crossing college boundaries.

As part of the continued development of SCSE programs, efforts will focus on evaluating and addressing the issues of preparation of incoming students, increasing enrollment demands, and maximizing resources for support of undergraduate research and education. Recruitment and retention of a diverse group of students and faculty will continue to be an area of emphasis with specific recognition of the increased need for female and minority faculty role models in the engineering, math and science disciplines that are known for their very low percentages of female or minority faculty and students nationwide.

Graduate Program and Graduate Research
SCSE houses a number of established, successful graduate programs. These programs will continue to be supported with a focus on increased exposure to recruit outstanding graduate students and researchers. SCSE is also positioned well to thrive in system-wide programs and in collaboration with campus affiliated Institutes.

SCSE will support immediate efforts for the development of a professional Master’s degree program to meet the needs of practicing and future practicing engineers. Graduate programs in each of the areas of engineering will be added over the course of four years with full implementation prior to the next strategic planning phase. Transdisciplinary Master’s degree programs between engineering, math, the sciences and medicine will also be investigated. In line with the needs of these programs and other programs within SCSE that have large-scale experimentation needs, SCSE will pursue a plan for additional infrastructure. One option is to obtain off campus facilities that can serve transdisciplinary research activities with shared resources including technicians and equipment.

SCSE Administrative Services, Faculty Development and Outreach
SCSE administrative and technical staff (at both the college and department levels) have significant additional time constraints due to the need to support the growing programs and research in SCSE. The workload of staff will be reviewed for potential reallocation with a focus on use of existing resources combined with additional demands as a result of new engineering programs and new graduate programs. Significant staff time for training and continuing education will be considered in this workload review. Dedicated computer technician support for SCSE will continue in line with needs.

In light of increasing demands for assessment of all programs (particularly the documentation requirements of ABET for the engineering and computer science programs), faculty and staff will be encouraged to establish and coordinate long-range plans for data collection, assessment, and continuous improvement utilizing existing tools (such as E-Portfolio) where applicable.

Faculty will be encouraged to be at the forefront of the state-of-the-art and to further their national and international presence through use of updated web information, conference attendance, professional committee work and related activities. The expanding graduate programs will support faculty research development and collaborative research efforts. Outreach that utilizes a faculty and staff member’s professional expertise will also be encouraged, particularly if it involves communities in Northern Minnesota.