

Chemistry department awarded grant

By Paul Solsrud

The chemistry department at SCSU recently received approximately \$325,000 for new equipment that will enhance their classroom activities as well as assist ongoing research projects.

The two grants were awarded to the department by the National Science Foundation's Major Research Instrumentation program. The program encourages institutions to incorporate research and education in science, mathematics and engineering, by providing funds to colleges, especially to non-Ph.D. granting institutions. This year's endowments are expected to be similar to those of 2001, when 170 grants, totaling about \$25 million, were awarded.

According to Professor Lakshrnaiah Sreerama, SCSU received these grants "based on the merit shown on the application," highlighting the well-organized research and testing done by students and staff as well as their collaboration with other departments. Normally about one third of the grant applicants receive funding.

The chemistry department intends to use the money to purchase two machines as well as fund additional research for the department. The matrix assisted laser **desorption/ionization** (MALDI) mass spectrometer, which costs approximately \$157,000, will give information about the size and structure of large molecules such as proteins, DNA, and synthetic polymers. The laser will also be able to identify concentrations of molecules.

"Concentrations of proteins in blood or tissue samples can give information about diseases," said professor Micheal Jeannot. "Researchers will also produce laser materials, and study conductive polymers that may be used in solar cells and transistors."

"MALDI will help us understand the mechanisms of drug resistance in breast cancer patients," said Sreerama. "This will lead to the development of more effective anti-tumor drugs."

A second machine, called a Varian Eclipse spectrofluorimeter will also be purchased. The spectrofluorimeter will be used to study environmental pollutants in soil and water samples, assess foods, nutritional supplements, and pharmaceuticals for their ability to prevent or cause cancer, as well as investigating how ultraviolet light interacts with organic compounds.

"This will enable us to develop a more complete picture of a

compound's reactivity," stated Professor Daniel Gregory.

As well as helping the faculty and the students of SCSU the equipment will also be used by St. John's and St. Ben's Universities for their research. Local high school teachers who attend workshops as well as high school chemistry classes will also benefit from the use of these machines.

"Using the new equipment in research and classroom activities will keep SCSU faculty and students on top of modern chemical instrumentation and help prepare students for industry and/or graduate school," said Michael Dvorak, Assistant Professor of Chemistry. More than 30 chemistry students participate in faculty-student collaborative research projects each semester.
