Advancing the Vision

The Grants That Keep on Giving

The W.M. Keck Foundation provides crucial funding for innovative science research at SU

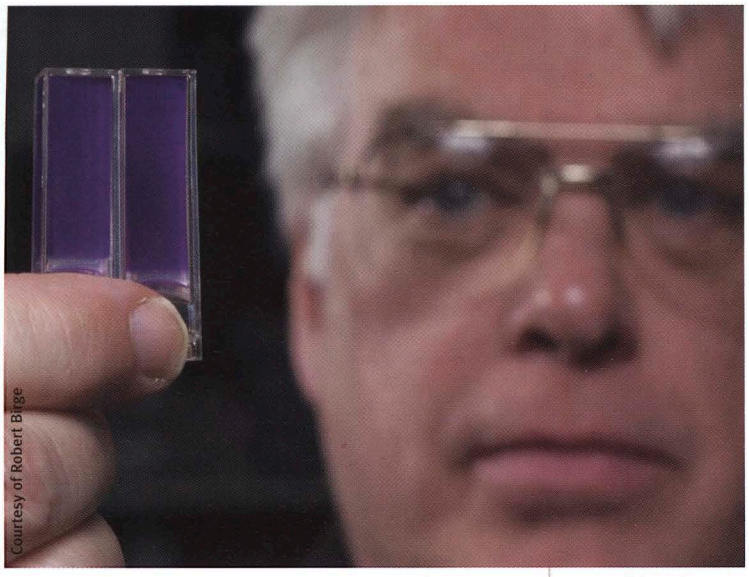
Syracuse University has many different kinds of friends and supporters, all of whom play crucial roles in sustaining the institution. Among them are alumni, parents, corporate partners, and private, not-for-profit foundations that are dedicated to enhancing society through loyalty to the visions of their founders. "While alumni and other individuals represent 85 percent of giving, and corporations about 5 percent, grants from foundations now account for about 10 percent of giving at Syracuse—and that percentage is growing," says John D. Sellars, executive vice president for institutional advancement. "Among the foundations, the W.M. Keck Foundation of Los Angeles has emerged as one of our special friends in the area of basic research and science education."

Over the past 12 years the Keck Foundation's Science, Engineering, and Liberal Arts and Medical Research Section has helped the University upgrade its laboratory facilities through a series of grants totaling millions of dollars. Most recently, Keck has supported University Professor Charles T. Driscoll and his colleagues for a three-year research initiative to quantify the effects of acidic deposition on forest and aquatic ecosystems through the application of a forest soil-water model.

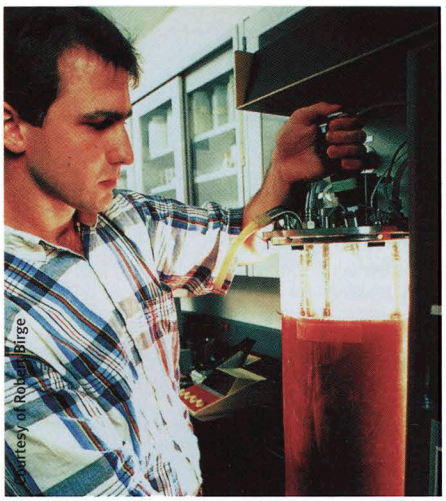
The Keck grants have also served as seed money in attracting millions more from government agencies, including the National Science Foundation and the National Institutes of Health, as well as private sector sources. In addition, the presence of advanced facilities and specialized equipment brought to campus with the help of Keck grants has been instrumental in attracting new faculty to Syracuse from other research universities. Given the ambitious goals for research and education that have been set in the University's Academic Plan, the value of Keck's contributions has taken on new meaning.

The W.M. Keck Center for Molecular Electronics, located on campus at the Center for Science and Technology, includes some 10,000 square feet of space containing an array of world-class facilities: an advanced materials and prototyping laboratory that has the capability of making protein-based computer memories; a "clean room" suitable for biomolecular experimentation; and a materials and single crystal X-ray diffraction facility for the development of new organic and inorganic materials. It also offers Syracuse researchers access to other Keck facilities. "The Keck Center provides us with facilities that allow us to fulfill contracts we otherwise would not even be able to seek," says University Professor Robert R. Birge, who is director of the W.M. Keck Center for Molecular Electronics (see related story, page 46). "These projects typically generate an annual return of more than three times the original cost of the facilities. In addition, the center has raised nearly $10 million in extramural funding that can be directly related to the initial investments made by the W.M. Keck Foundation."

Among the exciting opportunities opened up to SU faculty and graduate students by the Keck Center is participation in the development of a new generation of computer memories and asso-



University Professor Robert Birge, director of the W.M. Keck Center for Molecular Electronics, holds a pair of protein-based cuvettes, which store computer data.



Chemistry professor Jeff Stuart G'98, director of the Advanced Materials and Prototyping Laboratory at the Keck Center, monitors the progress of a fermenter run to produce the bacteriorhodopsin protein. A prototype computer memory uses lasers to store information in the protein-based cuvette (below).

ciative processors that will differ radically from those presently in use. The integrated circuit, the basic medium for information movement and memory storage in contemporary computers, is "fast approaching its practical economic limits," Birge says. He believes it will be replaced by computers whose internal architecture is modeled on the structure of electronic molecules, predicting that these new computers are likely to be smaller and faster than anything thus far.

William Myron Keck, the founder of the Superior Oil Company, created the W.M. Keck Foundation in 1954. According to Chairman and President Robert A. Day, "The foundation has a longstanding tradition of contributing to the research and educational programs of prominent institutions whose works yield landmark benefits to science and society."

Syracuse can take pride in being counted among those prominent institutions, and is grateful to the W.M. Keck Foundation for doing so much to ensure the University's future at the forefront of scientific research and education. Those thanks also go out on a personal level. "In all my years in academics," Birge says, "the Keck Foundation has supplied some of the most critical funding for my research efforts by providing unique instrumentation that no other granting agency would consider. This is because it is willing to fund ultra-high-risk projects."

—David Marc