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NSF Grant to Produce Undergraduate Courses in Nanotechnology

Curriculum to educate cross-disciplinary leaders in chemistry, physics, material research

**Program pairs Evident Technologies and Siena College
A boost to New York's "Tech Valley"**

Loudonville, NY, June 2003 - Siena College professors Karen Quaal, Ph.D. and Joshua Diamond, Ph.D., in collaboration with Evident Technologies, a nano-materials and nanotech application company in the New York Capital Region, have been awarded a \$100,000 grant by the National Science Foundation to introduce nanotechnology into the undergraduate curriculum.

The grant will be used to design and implement laboratory modules coupled with summer research, to introduce undergraduate students to the field of nanotechnology (nano = 1 billionth of a meter) and advanced semiconductor nanocrystal quantum dot materials. The modules will allow students to become acquainted with the field, and to open the possibility of pursuing entry-level positions or further training in related fields.

Dr. Clinton Ballinger, CEO of Evident Technologies, explained that "Nanotechnology products based on quantum dots is the next platform for a whole host of products ranging from LEDs, to displays, to biotechnology. It is critical that we develop cross disciplinary skills of biology, physics, chemistry, and business majors, at the undergraduate level, for the nanotechnology industry to accelerate its development."

Much like pre-med education prepares the next generation of doctors; Ballinger believes the NSF grant will help Evident and Siena to develop courses to educate the next generation of leaders in nanotechnology. "We are pleased that NSF has given Siena College and Evident Technologies the opportunity to develop an undergraduate course on nanotechnology."

Nanotechnology research also holds promise in fields such as medicine and law.

The grant for Siena and Evident is funded through the National Science Foundation Nanoscale Science and Engineering, Nanotechnology Undergraduate Education Program. The goal is to support fundamental research and development, and increase synergistic science and engineering research and education in emerging areas of nanoscale science/technology.

Siena's Dr. Quaal, a former NSF Polymer Education Scholar and a curriculum developer, serves as principal investigator for the new project. Dr. Diamond, a physics professor whose research in solid state physics interfaces nanotechnology, is co-principal.

They point out a few Siena College undergrads have already done internships with Evident Technologies. The firm has been using the college's state-of-the-art Morrell Science Center labs for development of the unique and colorful nanocrystals.

Quaal and Diamond will design two five-week modules for chemistry and physics majors that will be inserted into newly developed courses they will team-teach at Siena.

Dan Landry, co-founder of Evident Technologies and vice president of the firm's nanocrystal research and development, will co-teach. Upon completion of the modules, Siena College students and a faculty member will do research with Evident.

The program also holds promise for high school students who study at Siena in summer. The college is a site for the Center for Talented Youth run by Johns Hopkins University.

General Electric Company's senior vice president of global research, Scott Donnelly, agreed this collaboration of undergraduate educators and business is a step forward.

"We believe that the application of nanotechnology will have a dramatic impact on products ranging from semiconductor devices to renewable energy generation technology," Donnelly emphasized. "Exposure to this technology at the undergraduate level will be critical to developing the next generation of material scientists."

Kelly Lovell, president and CEO of the Center for Economic Growth, is excited about this new collaboration in the New York Capital Region.

"The partnership between Siena College and Evident Technologies is another example of academic and private industry collaboration," said Lovell. "Building these linkages will assist 'Tech Valley' in developing cutting-edge technology capabilities as well as supporting efforts to retain our area's talented college graduates."

Evident Technologies is the premier commercial source for nanocrystals. The particles are high precision semiconductors that can be engineered to meet needs for new fluorescent or photonic materials in biotechnology, optical transistors/switches, optical computing, photovoltaics, light emitting diodes (LED), lasers and other applications. Evident's Web site is www.evidenttech.com

Siena College is a Catholic, co-educational liberal arts college in the Franciscan tradition. The College's 2,800 undergraduate students choose from 25 majors in liberal arts, science and business. Siena's 155-acre campus is located two miles north of Albany, N.Y. The College's Web site is www.siena.edu

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Photos of Evident's nanocrystals are available online at www.evidenttech.com