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**GEORGIA TECH PROGRAM PULLS  
WOMEN AND MINORITY STUDENTS  
INTO GRADUATE SCIENCE ARENA**

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**Photography Available**

In the summer of 1989, student Troy Hammond was thrown into the frying pan of laboratory research, thanks to a hands-on program at the Georgia Institute of Technology. Confronted by an alien procedure called laser-induced plasma spectroscopy, Hammond says he reacted with "fear and confusion."

Ten weeks later, however, Hammond knew where he was going: Georgia Tech.

Billed as a Research Experience for Undergraduates (REU), the Georgia Tech program targets women and minorities.

"If we're going to continue to pursue science as we know it," says assistant physics professor Dr. Margaret Graff, "we must create an environment which is supportive for individuals who do not happen to be white, male scientists and engineers."

A member of the chemical and optical physics group within Georgia Tech's School of Physics, Graff is an REU project director with "a strong personal commitment to promoting women and minorities" in the scientific arena.

These populations represent an abundant reservoir of science and engineering students, says Dr. Rolf Sinclair, program director for the National Science Foundation's cross-disciplinary programs in physics. "We're not getting enough women and minorities into the pipeline," he adds. "We have to reach out for them and pull them in."

The NSF sponsors REU programs at universities throughout the United States, but not all of them target a specific group of students.

Participants in the Georgia Tech REU physics program are usually rising seniors at southeastern colleges that don't offer graduate degree opportunities. Graff hopes the summer session allows her students to make an informed decision about graduate school. At the same time, she says, the program provides students with a reasonable summer income -- \$2,500 for 10 weeks.

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During last year's session, Graff remembers, students experienced the full gamut of emotions common to laboratory researchers. Initially, they were "very buffaloes by the laboratory atmosphere," she says, and most were discouraged by the half-way mark. But positive results at the close of the session made everyone "drunk with power."

"We went through the full cycle, and I hope we can pull that off again this year," Graff says. "We want them to experience the highs, but it's also important to learn that experimental physics is a tough business and you have to work your way through a lot of problems."

Graff shares responsibility for the REU program with four other Georgia Tech faculty members: Drs. Kevin O'Donnell, Raj Roy, Jim Gole, and Turgay Uzer. Each faculty member directs two REU students during the summer.

For the past 10 years, Georgia Tech has also provided an REU program in the School of Chemistry, directed by Dr. Kent Barefield. By summer last year, Barefield says, 69 students had participated in the program. Of those, 43 went on to graduate school in chemistry, and 18 of the 43 selected Georgia Tech, he says.

Often guided by Georgia Tech's Office of Minority Educational Development (OMED), the school's minority recruitment efforts have apparently paid off. In 1986, Georgia Tech placed fifth (just below four predominantly black institutions) among all U.S. engineering schools for the number of black B.S. graduates. During the 1988-89 school year, minority students represented 11 percent of the total student body in science and engineering programs.

But just what is "laser-induced plasma spectroscopy," anyway? These days, Troy Hammond is prepared to explain.

"It's an analysis technique," he says. "Basically, we're hitting this metallic rod with a laser, and that creates a plasma. Then the plasma is carried along by a gas, and we can perform spectroscopy (a chemical analysis procedure) on the light emitted from the plasma. We learn about molecules that way."

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