

GRANT OPPORTUNITIES

Newsletter of the Office of Grants and Program Review

February 2004

UTC's Undergraduate Summer Research Program Thrives

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UTC has always been proud of the many talented undergraduates who have contributed to the university's research community. Since 1986, the Department of Chemistry has maintained a continually growing summer undergraduate research program that has brought increasing recognition to the department and the institution.

Three years ago, the Department of Chemistry received a \$60,000, three-year grant from the Merck Corporation and the American Association for the Advancement of Science (AAAS). This Merck/AAAS Symbiosis Grant was sought to increase the number of undergraduate students who could participate in summer research. In 2003, a total of thirty participants took part in the largest summer research program in UTC's history: sixteen undergraduate students, ten faculty, and four outside participants engaged in a variety of research activities. With this large program came a record level of financial support. These activities were supported by numerous other grants, both internal and external, that reached a total of over \$125,000.

Another aim of the program was to foster interdisciplinary

projects between the Departments of Chemistry and Biology and Environmental Science. Over the three-year period, the Merck/AAAS Symbiosis Grant has supported four faculty and six students from each of the two departments.

The Merck/AAAS grant has been a catalyst for increased student participation in the summer research program as well as increased external support for chemistry faculty. The number of undergraduate research participants increased significantly following the start of the Merck Grant in 2001. In addition, the number of publications with undergraduate co-authors and the number of presentations at major conferences by undergraduates have doubled over the last two years.

Perhaps the most important assets to the Summer Research Program are the undergraduates and the opportunities the program affords. One student, Katherine Van Deusen, was selected by Merck to present her research results at the February AAAS Meeting in Seattle. Her project, "Stimulation of nahAC Gene Production in Naphthalene-Spiked Polycyclic Aromatic Hydrocarbon Contaminated Soils," has been carried out under the supervision of Dr. Henry Spratt, Professor in the Department of Biology and Environmental Science, and Dr. Dawn Castle, a post-doctoral stu-

dent in the department. Their research focuses on the coal tar contamination of the Chattanooga Creek floodplain, a local EPA Superfund site. They are analyzing the prospect of revitalizing the area using a process known as bioremediation, which would allow existing microbial enzymes in the soil to degrade the dangerous substances. Ms. Van Deusen's experience with the program "was great. I decided to go to graduate school instead of medical school. It made me realize I really love research." Other students have felt the same way, especially about the overarching effects of the interdisciplinary program. Daniel Barker, a senior Biology: Pre-Medicine major "was pleased to discover that most research this year seemed to focus on environmental remediation and brought together the sciences to solve problems ranging from heavy metal pollution to the presence of carcinogens in soil."

Students involved in this years program include: Daniel Barker, Paul Boerema, Weinan Chen, Rob Craven, Jane Dickerson, Brett Ferrell, Phillip Gass, Greg Helton, Lensey Hill, John Lee, Sara Magee, Erika

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Milzek, Laura Palmiero, Ken Patel, Mary Teague, and Katherine Van Deusen. Faculty from the Department of Chemistry include: Dr. Greg Grant, Dr. Monte Helm, Dr. Kyle Knight, Dr. John Lynch, Dr. Rob Mebane, Dr. Gretchen Potts, Dr. Manuel Santiago, Dr. Steve Symes, and Dr. Tom Waddell. Faculty from the Department of Biology and Environmental Science include: Dr. Sean Richards and Dr. Henry Spratt. Other post-doctoral students in the

Departments have also contributed to the research. As an extension of the cross-disciplinary spirit, four outside participants from the Chattanooga academic community were invited. Professor Larry Mehne from Covenant College and Mr. Keith Sanders, a local high school chemistry teacher both brought one of their students to pursue summer research at UTC.

The Merck/AAAS grant is only one of a number of other grants that have enabled the Departments of Chemistry and Biology and Environmental Science to expand their

research opportunities for undergraduate students. Not only do the undergraduates gain hands-on experience in their field, but also gain valuable experience working with faculty and students from other disciplines and situations. The projects themselves embody UTC's mission, emphasizing collaborative partnerships that engage the research community to cross institutional and disciplinary boundaries to protect the local environment.

GRANTS AND RESEARCH

February 1, 2004 — February 29, 2004

FUNDED GRANTS

COLLEGE OF ARTS & SCIENCES

DR. TATIANA ALLEN

National Research Council	Collaborative Research in St. Petersburg Russia	\$9,050
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DR. STEPHEN LEWINTER

AASCU	Japan Institute at San Diego State University	\$5,500
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COLLEGE EDUCATION & APPLIED PROFESSIONAL STUDIES

DR. DEBORAH MCALLISTER

Sun Microsystems	Sun Web-Hosting of the Chattanooga Math Trail	\$9,860
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COLLEGE OF ENGINEERING & COMPUTER SCIENCE

SIMCENTER

Office of Naval Research	Simulation and Analysis of Proposed Underwater Vehicles	\$150,000
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SIM CENTER

Mississippi State University	Development of a Computational Fluid Dynamic Capability for Centrifugal Compressors	\$33,500
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