

PATHFINDERS MONTHLY

Newsletter of the Office of Grants and Program Review
June 2006

Dr. Ed McMahon and the College of Engineering and Computer Science *Lead the Way* to a Brighter Future for Engineering

In 2003, there were 1.3 million engineering/engineering technology jobs available in the U.S. without trained people to fill them. According to the federal government, we will need 15 million engineers and technology workers by the year 2020. Despite the ever-increasing demand in the high-tech job market, however, engineering programs at colleges and universities throughout the nation struggle to recruit and retain students to degree completion. Nationwide, only 50% of students who enroll in engineering programs at institutions of higher education complete their degrees. Studies have linked the extraordinarily high attrition rate to inadequate preparation in secondary school.

Leading the campaign for better preparation is Project Lead The Way (PLTW), a national non-profit organization designed to help secondary schools across the nation give students the knowledge they need to excel in high-tech fields. To achieve this goal, PLTW has developed a specialized sequence of courses which, when combined with college preparatory mathematics and science courses in high school, introduces students to the basic concepts of engineering and engineering technology before they enter college. The PLTW curriculum features cutting-edge technology and software beyond what is

typically available at the secondary levels, so the PLTW program also provides specialized training for the middle and high school teachers who will utilize these important technology resources to enhance learning among their students. PLTW's primary focus on teacher professional development is a key to the project's long-term success.

In 2004, UTC's College of Engineering and Computer Science (CECS) was selected as the official PLTW training affiliate for the state of Tennessee. Under the leadership of **Dr. Ed McMahon**, Professor of Engineering and Director of PLTW, and Ms. Julie Sanders, Coordinator of PLTW, the CECS supports Tennessee's network of 19 schools currently implementing PLTW and works to recruit additional schools to adopt the curriculum. In addition, Dr. McMahon and CECS faculty serve as trainers for teachers across the state who will implement the program in their school districts. PLTW is a team effort for the college, and Dr. McMahon has engaged colleagues including Dr. Claire McCullough, Dr. Joseph Owino, and Dr. Cecelia Wigal, to play important roles in implementing the program.

This year, Dr. McMahon and Ms. Sanders secured \$44,928 from the Tennessee Department of Education to support PLTW

training activities at UTC. Dr. McMahon and Ms. Sanders will use this funding to provide training in the PLTW curriculum to two additional CECS faculty members, preparing them to conduct intensive two-week summer training institutes for middle and high school teachers. Ms. Sanders will also coordinate a statewide fair to showcase PLTW student projects and an awareness conference for high school counselors. Dr. McMahon and Ms. Sanders will work with the Tennessee Department of Education to recruit individuals from both the public and the private sectors to establish a PLTW State Advisory Board.

Project Lead The Way has already made strides in increasing the number of young people who pursue engineering and engineering technology programs requiring a four or two - year college degree. In fact, PLTW students are more than three times as likely as their peers to enroll in post-secondary engineering and technology programs. The efforts of Dr. McMahon, Ms. Sanders, and the CECS faculty will ensure the continued success of Project Lead The Way in Tennessee, and UTC's involvement in this important national initiative will enhance the technology workforce of the future.

THE UNIVERSITY OF TENNESSEE AT CHATTANOOGA

FUNDED GRANTS AND RESEARCH

JUNE 1, 2006 –JUNE 30, 2006

COLLEGE OF ARTS & SCIENCES

DR. TRACY JONES

NSF	Enhancing Diversity in the Geosciences through Awareness, Recruitment, and Training using the Chattanooga Earth Explorers	\$46,304
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DR. BILL MCCLAY

Council for the International Exchange of Scholars	Fulbright Award for scholarly activity in Italy	\$17,225
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DR. JONATHAN MIES

TVA	Analysis of Coal Ash and its Alteration Products	\$3,240
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COLLEGE OF ENGINEERING & COMPUTER SCIENCE

SIM CENTER

Tennessee Centers of Excellence	Center for Computational Engineering and Computer Science	\$775,400
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COLLEGE OF HEALTH, EDUCATION & PROFESSIONAL STUDIES

DR. LUCIEN ELLINGTON

Association for Asian Studies	Education About Asia Journal 2006	\$63,922
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DR. PAT KOPETZ

Council for the International Exchange of Scholars	Fulbright Award for scholarly activity in Malawi, Africa	\$32,300
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DR. KAY LINDGREN

Various	Clinical Site Agreements for Nursing Students 2006-2007	\$224,000
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ADMINISTRATION

DR. DEBORAH ARFKEN

German Academic Exchange Service	Germany Today: Innovations in German and European Graduate Education	\$2,500
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