



## MEDIA RELEASE

FOR IMMEDIATE RELEASE  
Feb. 23, 2010

CONTACT: Nancy Hensel  
202-783-4810 ext. 201

### UNDERGRADUATE RESEARCH IS IMPORTANT SOURCE OF BREAKTHROUGH RESEARCH AND FUTURE STEM PH.D.S

WASHINGTON (Feb. 23, 2010) – Undergraduate research contributes greatly to the pipeline of both breakthrough scientific discoveries and the next generation of Ph.D.s in STEM fields, congressional staff and media were told today at "Transformative Research at Undergraduate Institutions: The Capacity To Revolutionize," a Capitol Hill briefing sponsored by the Council on Undergraduate Research ([www.cur.org](http://www.cur.org)) and the U.S. House Science, Technology, Engineering and Mathematics Education Caucus.

National experts examined the tremendous contributions made by the nation's undergraduate institutions to science, innovation and regional economic and workforce development through transformative research. Often described as "high-risk, high-reward," transformative research is research that has the potential to radically change our understanding of an important existing scientific or engineering concept or lead to the creation of a new paradigm or field of science or engineering.

"Undergraduate institutions and students across the nation are actively engaged in breakthrough research," Cora Marrett, Acting Deputy Director, National Science Foundation said. "It is critical that policymakers understand undergraduate research's great potential for driving innovation and support its growth at undergraduate institutions across the nation."

Moses Lee, Ph.D., Professor and Dean of the Natural Sciences and Applied Sciences, Hope College, described the contributions of undergraduate students to his research work on the design and development of anticancer and antiparasitic agents. They are combining the latest discoveries of genomic information from various cancers and the malaria parasite, and apply this information in the design and discovery of novel gene-target and potentially safe anticancer and antimalarial medicines.

"Undergraduate institutions are hotbeds for recruiting, nurturing, and producing high quality STEM graduates who go on to get PhDs," Professor Lee said. "There is no substitute for high quality and transformative undergraduate research when the goal is to excite students about science and to encourage these students to pursue PhD degrees."

Kristin Dittenhafer, a former student of his now studying at the University of Wisconsin-Madison, presented her laboratory work in biochemistry that will lead to greater understanding of epigenetics.

Michael Zach, Assistant Professor of Chemistry, University of Wisconsin-Stevens Point, and Guest Faculty Researcher at Argonne National Laboratory, and one of his students, Tyler Shogren, discussed their work together in nanotechnology research. In his teaching, Professor Zach uses an atomic force microscope (AFM), a powerful teaching and research tool that can capture three-dimensional surface profiles of nanoscale materials; he also takes a group of students to Argonne, one of the nation's most prestigious scientific laboratories, to meet with top nanotechnology researchers.

(more)



Describing a recent visit to Argonne, Professor Zach said, “An experience like this for our underclassman is out of the ordinary, and no doubt they all took something positive away from this opportunity. My goal is to let my students know that the sky is the limit on where they can take their scientific research – I think the students realize that they are becoming the leaders of science who will discover technologies that lead to the jobs our nation needs.”

The panel of speakers also reported on a June 2009 summit on transformative research held by CUR and funded by the National Science Foundation, Research Corporation for Science Advancement, and the American Chemical Society Petroleum Research Fund. A monograph from the summit with examples of transformative research was distributed and is available at [www.cur.org](http://www.cur.org).

The Council on Undergraduate Research ([www.cur.org](http://www.cur.org)) supports faculty development for high-quality undergraduate student-faculty collaborative research and scholarship. Nearly 600 institutions and over 5000 individuals belong to CUR. CUR believes that the best way to capture student interest and create enthusiasm for a discipline is through research in close collaboration with faculty members.

###