Jeff Humpherys received a prestigious award from the National Science Foundation (NSF) the benefits of which he hopes to use to help recruit top graduate students to the university.

Humpherys, an assistant professor in the Department of Mathematics, was awarded an NSF CAREER Award in June for his teaching and research. He said he did not expect to win the grant when he submitted his proposal.

“The CAREER Award is a prestigious grant that goes to young professors, usually the best and the brightest,” he said. “Most people who get it went to MIT and schools like that. It really favors up-and-comers. I thought I maybe had a one percent chance of getting it.”

Humpherys said he tried to focus on BYU’s best qualities in his grant proposal; namely, the students and the unique opportunities presented to them by the university.

“I really focused on the education and teaching aspect of BYU,” he said. “BYU has an advantage in mentoring and teaching. We’re the best in the business. Other places don’t do this like we do.”

CAREER Award applications are generally focused on the research of the candidate. However, Humpherys decided not to go that route, instead opting to pitch his research in concert with the university’s Interdisciplinary Mentoring Program in Analysis, Computation and Theory (IMPACT) as his biggest selling point.

Though IMPACT has only existed for a couple years, Humpherys said both NSF and other universities are beginning to take notice. The mentoring program, which pairs students with professors to perform research and get hands-on experience, is great for the participating undergrads and will be even better as more graduate students are recruited to fill supervisory roles as they conduct their own research.

“We want more graduate students,” Humpherys said. “If we can recruit grad students to come and help teach and mentor the undergrads, then we can mentor more students than if the professors did all the mentoring on their own. We could mentor five times as many students.”

Some universities across the country...
**Humpherys continued**

are considering adopting the IMPACT model. Humpherys said he thinks much of the interest has been generated not just by the program’s success and excellence, but by a rising fear that the United States is being outstripped by its foreign counterparts in math and science.

"NSF has a lot of things it tries to do, but national competitiveness in math and science is paramount," he said. "Right now our country is moving in the wrong direction and that’s a big problem. What happens when China has a better fighter jet? What happens when more countries have nuclear capabilities? The government senses that we’ll be in trouble. But as long as we can retain our dominance in science, technology, engineering and mathematics, we’ll continue to be a superpower and be able to sustain our way of life.”

CAREER Awards are presented on a yearly basis to young professors in a number of scientific and mathematical disciplines. The grant is funded by the National Science Foundation and is the foundation’s most prestigious award for junior faculty.

by: Steve Pierce

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**Total Synthesis Of Complex Compound Achieved**

A BYU research group has reached a breakthrough in its study of a complex chemical compound, an accomplishment that is already garnering significant respect from the scientific community.

Dr. Steven L. Castle, an associate professor in the BYU Department of Chemistry and Biochemistry, and his research team recently completed the total synthesis of acutumine. The team also includes graduate student Fang Li and undergraduate student Samuel S. Tartakoff.

Acutumine, which comes from an Asian hanging vine, is often used in Chinese medicine to reduce pain and fever and has a unique structure. Castle said acutumine has anti-amnesic properties in rats, meaning that it can potentially restore memory loss in humans.

The process used to synthesize acutumine includes new chemical reactions that could be used by pharmaceutical companies to synthesize medicines, he said.

Unfortunately, due to the compound’s complex structure, it took 42 years for someone to synthesize acutumine following its discovery. "The structure is so challenging that people weren’t trying to make it until 8 or 9 years ago," Castle said.

Castle has been researching acutumine since 2003. Fang Li began his research in 2004. Their article, entitled "Total Synthesis of (−)-Acutumine," was published in the Journal of the American Chemical Society web site on April 28 and quickly skyrocketed into popular demand.

The paper ranked 7th on the Journal of the American Chemical Society’s most-read papers list for April. The journal publishes more than 200 papers in any given month.

A summary of the article – and many positive reviews – can be found on a web site created by Oxford graduate Paul Docherty. Docherty, who started www.totallysynthetic.com in 2006, has summarized papers from many top universities, including Stanford, Harvard and MIT, on his site. Castle is pleased by the exposure that Docherty’s site will offer BYU, his students, and their ongoing research.

by: Keri Lunt

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**Dean’s Office Prepares To Say Farewell To Griffen**

Associate Dean Dana T. Griffen will retire on September 1, 2009. He served in the CPMS Dean’s Office for ten years and provided an array of invaluable skills and talents to the college. Griffen and his wife, Berva, now plan to serve a full-time mission for the LDS Church. The CPMS staff thanks him for his service and wishes him the best of luck with his future endeavors.