



# News Release

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## **WESTERN STUDENTS SHINE AT INTERNATIONAL COMPETITION**

**St. Joseph, Mo.** —Nov. 9, 2006—Describing it as “the most prestigious presentation accomplishment math and science students have ever had at Western,” Dr. Todd Eckdahl, professor of biology, said he couldn’t be prouder of the team of six biology and mathematics students from Missouri Western State University and a student from Central High School in St. Joseph that participated in an international competition at the Massachusetts Institute of Technology (MIT) in Cambridge, Mass. last weekend. The team came home with four awards, including first place in Best Oral Presentation. Dr. Eckdahl and Dr. Jeff Poet, assistant professor of mathematics, were the team leaders.

The Western team was one of 32 teams from around the world that presented at the International Genetically Engineered Machines (iGEM) Jamboree, and was only one of three institutions that are primarily undergraduate institutions. It was the only institution from the Midwest. Western collaborated with Davidson College in North Carolina on the research project.

Marian Broderick said she was humbled to see the caliber of competition, but “as more teams gave presentations, we relaxed a little. We realized we were on the same level.” She, along with Trevor Butner, of Savannah, Mo., gave the presentation, and Central High School student Lane Heard, of St. Joseph, assisted. “People in the audience responded well and enjoyed it,” Broderick said.

iGEM is an international initiative out of MIT to expand the relatively new field of synthetic biology, Dr. Eckdahl explained. The research teams used interchangeable parts to build biological devices. Initially, more than 500 parts were supplied by MIT, but as teams created parts, all teams were allowed to use them. Western and Davidson teams

contributed 62 parts to the collection, called the Registry of Standardized Biological Parts.

Western and Davidson's research project involved the use of the bacterium *E. Coli* to solve "The Pancake Problem." Given an arrangement of different sized pancakes in a stack, the goal was to determine the least number of flips needed to order the pancakes from smallest to largest. Within an *E. Coli* cell, pieces of DNA are the "pancakes," and enzymes are the "spatula." The team constructed DNA with some of the pieces in an incorrect order and attempted to flip pieces of DNA until the correct order was obtained. The team has already shown that one pancake can be flipped and will continue efforts to flip multiple pancakes.

"I was really pleased. At the outset, I didn't expect we'd be able to flip a pancake," said Dr. Eckdahl. "But even if nothing had worked, it still would have been a success in terms of the research experience the students had."

Dr. Poet noted that the research involved a lot of troubleshooting when something didn't work, which led to a lot of learning.

"It broadened my range of educational experience," said Broderick, the only math major on the team. "I was able to take what I learned in math and use it in a different field."

At the Jamboree, first, second and third place awards were given in 10 categories. Along with Western's first place award in Best Oral Presentation, the collaborative team of Western and Davidson won second place in both Best Poster and Best Cooperation and Collaboration, and third place in Best Conquest of Adversity.

"I commend Missouri Western for giving their students that opportunity," Broderick said of the Jamboree. "We were in the company of the world's leading experts on synthetic biology. It was the most educational, but fun trip I've ever been on."

Along with Broderick, who is from Wichita, Kan., the Western research team consisted of Adam Douglas Brown, St. Joseph; Trevor Butner, Savannah, Mo., Eric Jessen and Kelly Malloy, Brookfield, Mo., Brad Ogden, Missouri Valley, Iowa; and Central High School student Lane Heard.

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*Missouri Western State University is a four-year public institution providing a blend of traditional liberal arts and professional degree programs. The university offers student-centered, high quality instruction that focuses on experience-based learning, community service, and state-of-the-art technology. Western is located in St. Joseph, Mo. and is committed to the educational, economic, cultural and social development of the region it serves.*