

Missouri Western

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campus news

Students shine at international competition

They earn 1st place for presentation

Pancakes, bacteria and DNA all came together for “the most prestigious presentation accomplishment math and science students have ever had at Western,” according to Dr. Todd Eckdahl, professor of biology. He and Dr. Jeff Poet, assistant professor of mathematics, led a team of six Western students and a high school student in an international research competition sponsored by the Massachusetts Institute of Technology (MIT) last fall. The team came home with four awards, including a first place in Best Oral Presentation.

Western was one of 32 teams that presented their research at the International Genetically Engineered Machines (iGEM) Jamboree, an initiative out of MIT to expand the relatively new field of synthetic biology. Western was only one of three institutions in the competition that are primarily undergraduate, and the only institution from the Midwest.

“I was intimidated going in. Teams from Princeton, Harvard, MIT and Tokyo were there,” said team member Kelly Malloy of Brookfield, Mo. “But as the day went on and we heard other student presentations, I realized we had something good.”

“It shows that a little team from Missouri can compete with the big schools, and it shows we get a good education here,” said team member Eric Jessen, also from Brookfield.

The research project, in collaboration with Davidson College in North Carolina, involved the use of the bacterium *E. Coli* and “The Pancake Problem” - how many flips does it take to get an out-of-order stack of pancakes in order?

Within an *E. Coli* cell, pieces of DNA were the “pancakes,” and enzymes were the “spatula.” The team constructed DNA “pancakes” with some of the pieces in an incorrect order and attempted to flip pieces of DNA with the enzyme until the correct order was obtained.

The team showed that one “pancake” could be flipped and will continue efforts to flip more.

“I was really pleased. At the outset, I didn’t expect we’d be able to ‘flip a pancake,’” said Todd. “But even if

nothing had worked, it still would have been a success in terms of the research experience the students had.”

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Kelly said the project, which they began working on in June, helped him learn how to troubleshoot and overcome obstacles. “We had to use a lot of resources and test over and over again.”

At the competition, 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.

“We were in the company of the world’s leading experts on synthetic biology,” said team member Marian Broderick, of Wichita, Kan. “It was the most educational, but fun trip I’ve ever been on.”

Other team members included Adam Douglas Brown, St. Joseph; Trevor Butner, Savannah, Mo.; Brad Ogden, Missouri Valley, Iowa; and Central High School’s Lane Heard. ■



Members of the iGEM team work on “The Pancake Problem.”