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### YSU math teams beat out Harvard, Cal Tech

YSU math teams beat out Harvard, Cal Tech, earn "Outstanding" honor in international contest

There are a lot of words you can use to describe Youngstown State University mathematics majors Sarah Grove, Chris Jones and Joel Lepak – determined, intelligent, exceptional.

In March, the Consortium for Mathematics and its Applications came up with a word of its own: Outstanding. The three YSU seniors teamed up to compete in the Consortium's online international mathematics contest, which attracted nearly 700 teams from universities and colleges across the United States and as far away as Australia and China.

The YSU trio soared past the competition and was named one of five "Outstanding" teams in the world, the highest honor in the contest and the first time a YSU team has reached such internationally-recognized heights. "It's pretty amazing," said Jones, 22, of Hubbard. "The outstanding designation was always this magical rank that we sometimes came close to but never achieved. This year, we got it."

But the honors didn't stop with the Grove-Jones-Lepak crew. In all, seven YSU teams participated in the international contest. YSU placed sixth overall, beating out prominent institutions like California Institute of Technology and Harvard University. "It's been a goal of ours to keep company with the best mathematics programs in the world," said Nathan Ritchey, chairman of YSU's mathematics and statistics department. "To be listed ahead of places like Harvard and just below a place like the United States Military Academy – wow – that's some great company."

Ritchey credits Angela Spalsbury, assistant professor of mathematics and the teams' coach.

"It's really something that in just her second year here at YSU she has taken our teams to the next level," Ritchey said.

Spalsbury, in turn, credits the students. "It's them; it's not me," she said. "I just give them the encouragement to do it. They are amazing. I'm so proud." The Consortium for Mathematics and its Applications is a non-profit organization in Lexington, Mass., whose mission is to improve mathematics education for students of all ages. The Consortium annually holds the Mathematical/Interdisciplinary Contest in Modeling for undergraduate college students.

The competition began 8:01 p.m. Thursday, Feb. 6. Teams across the globe received an open-ended problem via the Internet and had until 8 p.m. Monday, Feb. 10, to research, develop and submit a solution.

The Grove-Jones-Lepak team's problem dealt with the use of a hypothetical gamma knife in the treatment of tumor cells in brain tissue. The team was asked to design a model to provide the fewest and most direct doses to treat the tumor without going outside the target tumor itself. Grove, 21, of Farmdale, said the team worked nearly around the clock on the problem, with each team member logging 50 to 60 hours in four days to come up with an 18-page scientific paper. "The students work on this almost non-stop," Ritchey said. "By Monday night, they look pretty bad." A group of top university mathematics professors spent a weekend in February reading and scoring hundreds of submitted papers. The results were announced in March. Only the top 1 to 2 percent of the papers are deemed "Outstanding." "Ecstatic," Grove said about how she felt about the designation. "It's what we were aiming for."

The team also won the Math Association of America prize. In addition, the team's paper outlining the solution will be published in the Journal of Undergraduate Mathematics and Its Applications, and team members will present the paper at the MAA's meeting in Boulder, Colo., in August. Lepak, 21, of Sharon, is the son of Keith

and Ann Lepak and a 1999 graduate of Sharon High School. He graduates from YSU in May with a bachelor's degree in mathematics and plans to attend graduate school. Grove, a 1999 graduate of John F. Kennedy High School in Warren, is the daughter of George and Lynda Grove. She graduates from YSU in May with a bachelor's degree in mathematics and plans to further her math studies in graduate school at North Carolina State University.

Jones, a 1999 Hubbard High School graduate, is the son of Martha and Robert Altier and Tom and Christine Jones. He graduates from YSU in May with a bachelor's degree in mathematics and plans to attend graduate school.

YSU has about 100 undergraduate math majors and about 20 students in the mathematics graduate program.

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