



Mathematics student speaks at international conference

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EAU CLAIRE —University of Wisconsin-Eau Claire mathematics major Tristan Williams, a junior from River Falls, traveled to the University of Florence in Florence, Italy, last summer to present the results of his faculty/student research project. It was the first time in the history of the eight-year Permutations Patterns Conference that an undergraduate made a presentation.

Williams' talk was titled "Enumeration of Wilf classes for paired patterns in  $S_n$  wreath  $C_k$ ."

"For Tristan to present at an international conference shows the quality of his work and his mathematical maturity," said Dr. Manda Riehl, assistant professor of mathematics.

"Research, to him, is fun, and he has a sense of wonder about how different areas of mathematics intersect in exciting ways."

Williams' presentation was based on research he did last year with Riehl and Mitchell Phillipson, Chippewa Falls, who graduated from UW-Eau Claire in 2009. It was focused on combinatorics, the study of the enumeration of discrete, finite sets. Permutation patterns involve the enumeration of certain mathematical "objects" that avoid or contain a given pattern or patterns.

Most students interested in combinatorics are not invited to present research until at least their second year of graduate school, in part because many undergraduate programs don't include a dedicated combinatorics course.

"The conference was really a good experience for me," said Williams. "At the time I was uncertain as to whether I wanted to become a mathematician, but now there's no question.

"Studying math is like working on an archeological dig. You don't know what you're finding or what you could learn from it, but you do it anyway because you know there's something there."

According to Riehl, UW-Eau Claire seems to attract motivated undergraduate research students "who are willing to put time and effort into learning material outside of our math curriculum in order to do entirely novel research."

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