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Math students to present summer research findings

Fresno State is the mathematics research hub this summer for eight undergraduate students from around the nation who are collaborating on problems related to the Algebraic Knot Theory and Zeros of Analytic Functions. The students will present their research from **12:30-2 p.m. on Monday.**

July 22 at the [College of Science and Mathematics](#) Dean's Room on the third floor of the Science II building.

The eight students participating were selected from more than 350 applicants for the eight-week [Research Experience for Undergraduates \(REU\) in Mathematics](#) program, funded by the [National Science Foundation](#). The students are working under Drs. Carmen Caprau and Tamas Forgacs in hopes of having their research published in peer-reviewed journals.

The students are split into groups, with some students focused on the mathematical theory of knots, which studies collections of tangled circles. Students are tasked with finding methods to distinguish these structures from one another. Other students are collaborating on various techniques used to determine the location of zeros of a special class of analytic functions. Recent approaches in this area of research have the potential to answer long-held questions in the field.

"The REU program is essential in our effort to position Fresno State and the [Department of Mathematics](#) on the national landscape of premier undergraduate institutions," Forgacs said. "Fresno State and our participating faculty directly impact the preparation of future mathematicians and scientists."

Unlike other sciences or engineering, math research is not done in a lab. Math students work at a board, discussing ideas with others while trying to find patterns and using software to generate examples.

"The problems students are working on this summer are fairly abstract, and students need some upper division courses in math to understand some of the topics connected to their work," said Dr. Oscar Vega of the Department of Mathematics. "Asking the students to do research means they are at the front end of the subject they are studying, and the ideas that will eventually solve their problem come from the students themselves."

The students in Caprau's group investigating the theory of knots are Patrick Chu (Rice University), Alex Chichester (State University of New York at Geneseo), Danny Orton (California State University, Fullerton) and Tsutomu Okano (Carnegie Mellon University). Forgacs' group on zeros of analytic functions consists of Fernando Quintino (Cal State Fullerton), James Haley III (University of Rochester), Rebecca Menke (Auburn University) and Carlee Simon (Davidson College).

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By [Eddie Hughes](#) | July 17th, 2013 | Categories: [PRESS RELEASES](#) | Tags: [Academics](#), [education](#), [Mathematics](#), [research](#), [students](#) | [Comments Off](#)

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