

Program Perspective

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Summer Research Experiences for Undergraduates

Many students come to college not having any idea what they want to do with their college degree, let alone all the possibilities that exist for putting those college degrees to work! Nowhere is that more true than in mathematics. For the past nine years, Drs. Dennis Davenport, Vasant Waikar and Patrick Dowling, have secured grants from the National Security Agency and the National Science Foundation to help math and statistics majors find their way to a career. Those students, who have come to Miami for seven weeks of summer to do mathematics research, leave knowing that mathematics can be applied to environmental work, mapping dependent systems; decoding and encoding everything from telephone calls to music on CD; modeling cancer growth and urban sprawl; programming traffic lights and of course, security systems.

For the past nine years, undergraduates have been coming to Miami to learn how to solve open-ended mathematics and statistics problems as part of the **Summer Undergraduate Mathematical Sciences Research Institute** (SUMSRI). This research experience for undergraduates is only one of many similar programs sponsored by the National Science Foundation and the National Security Agency. While students are here, they hear talks from professional mathematicians and statisticians, they also learn how to write up their results for professional journals, study for the Graduate Record Exam and take short courses in real analysis and abstract algebra. In the following year, the SUMSRI participants are sent to national meetings to present their research in competition with other student researchers.

Why give up a summer to do mathematics or statistics research? One student from a small teacher's college said, "It was worth it! I learned that the math world is a small family that has a reunion every year at some great place! I met potential graduate professors and other math family members through SUMSRI. Having my name on a published paper helped my chances of getting into the graduate school I wanted!"

There is no better way to prepare for the next level of your education than doing research in your field. Talk with your department about undergraduate research opportunities today!

