Department of Mathematical Sciences
MCMICKEN COLLEGE OF ARTS AND SCIENCES

SUMMER RESEARCH OPPORTUNITIES
FOR UNDERGRADUATE WOMEN

APLICATION DEADLINE: March 1, 2006

The Department of Mathematical Sciences is pleased to offer the following research project for the summer of 2006. Interested students are urged to contact the faculty member(s) directing the project that most interests them. By contacting the faculty member, you can discover more about the project, learn what your responsibilities will be and if possible, develop a timetable for the twelve-week research period.

Stock market data analysis: calibration and verification of pricing theories

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During the last 30 years or so, the financial theory and the Wall Street practice have experienced unprecedented influx and influence of advanced mathematics. Several Nobel economics prizes were awarded for such kind of research (for example, to John Nash, as documented in the famous movie "A Beautiful Mind", as well as to M. Scholes, R.C. Merton, and others).

The Undergraduate student will work in the Computational Finance Laboratory, Department of Mathematical Sciences, is available. The research project may involve:
(a)   fair pricing of stocks, options, and other financial contracts,
 (b)   portfolio optimization,
 (c)   market data analysis.

For more information on current work, please see Prof. S. Stojanovic' web site (http://math.uc.edu/~srdjan/). The undergraduate RA will study the elements of the theory, and assist and interact with Prof. Stojanovic and his graduate students. The project will involve some Mathematica programming. Any other programming experience will be a plus. The minimum prerequisite is Calculus 1 – 3 and corresponding Mathematica Calculus Labs.