Summer Research for Undergraduates

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The Department of Mathematics at the University of Washington will offer a summer program to introduce undergraduates to research in mathematics. This program is sponsored by the National Science Foundation under a Research Experiences For Undergraduates (REU) grant. The program will run from June 18, 2001 to August 10, 2001. At the University of Washington REU site, students will investigate inverse problems which arise in partial differential equations and discrete problems related to them. Briefly stated, the inverse conductivity problem is that of determining the conductivity inside a region from measurements of currents and potentials on the boundary. The students will be introduced to various forms of this problem, through lectures and reading. They will also be given an introduction to some of the possible numerical techniques for solving these problems. The students will become acquainted with the computing equipment and software which is available for work on these problems and will use these tools to investigate methods of solution. They will work in small teams in consultation with the faculty members.

This program is intended for highly motivated students who are United States citizens or permanent residents and who will have completed their junior year or equivalent by Spring, 2001. The following preparation is considered essential for admission to this program:

1. Linear algebra (including eigenvalues and eigenvectors)
2. Advanced (multivariable) Calculus
3. Differential equations (at the level of *Boyce and DiPrima*)
4. First year Physics
5. Experience using a computer language such as Matlab, Mathematica, C, or Fortran.

Admission is competitive and will be based on motivation, demonstrated ability in classwork, and on letters of recommendation. Students admitted to this program will be given a stipend of $2500. There will also be an allowance for travel depending on distance from Seattle. This will be an intense program, and students should plan not to engage in other activities during the duration of this program. On campus housing will be reserved for those that desire it. Students should not apply for admission to the University of Washington admissions office directly, but should send a completed application form to James A. Morrow at the Department of Mathematics. Deadline for applications is *April 1, 2001.* We have established a web site, `http://www.math.washington.edu/~morrow/reu01/reu.html`, that will contain current information about the program.

For any additional information call one of the following:

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