

# 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. The program will run from June 19, 2017 to August 11, 2017 at the University of Washington REU site, students will investigate several different areas of mathematics. The main topics of interest are Algebraic Combinatorics, Graph Networks, and 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 and related problems 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, 2017. The following preparation is considered useful for admission to this program:

1. Linear algebra (including eigenvalues and eigenvectors) is very important
2. Multivariable Calculus (Green's theorem, Stokes' theorem, Divergence theorem)
3. Differential equations (at the level of *Boyce and DiPrima*)
4. Elementary combinatorics
5. Experience using a computer system or language such as Maple, Matlab, Mathematica, C, Java, Sage, Python, or Fortran is advisable, but not required.

Admission is competitive and will be based on motivation, demonstrated ability in classwork, and on letters of recommendation. 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 is available 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 using the link in the website referred to below. Deadline for applications is April 1, 2017. The web site, <http://www.math.washington.edu/~morrow/reu16/reu.html>, contains current information about the program.

For any additional information contact one of the following:

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