PROBABILITY AND COMBINATORICS; MODELING AND COMPUTATION
A National Science Foundation Supported Undergraduate Research Experience
Summer 2015

Offers will be made soon after the February 27 deadline, and since ETSU participates in the "Common Earliest Reply Date Consortium of REUs" we will not insist on an acceptance to my REU before March 8.

East Tennessee State University, Johnson City, Tennessee

Eight undergraduate students will be selected to spend two months (June 1 to July 31) during the Summer of 2015 working on a variety of non-trivial research projects in

- *Combinatorics, Graph Theory, and Random Graph Theory & Structures.* Probability Theory and Classical Analysis will often be used as fundamental tools in their solution, though there will be a several "stand alone" problems in discrete mathematics. In 2015, specific areas of intensive investigation will include universal cycles and permutation patterns. Examples of papers written by students from past years may be found elsewhere on this website OR

- *Computation and Modeling.* Fundamentals of mathematical modeling and simulation of models will be a basis for all problems in the area of computation and modeling. Specifically, in 2015, we will focus on problems involving either networks or stochastic processes.

Our REU team will travel *en masse* to the Annual Joint Meetings in Seattle in January 2016, where the students' findings will be presented to a national mathematical audience. In addition, Anant Godbole's group will go to the International Random Structures and Algorithms Conference at Carnegie Mellon University, *during the last week of the REU!*

Students must be U.S. citizens or permanent residents to qualify, and applications from women, underrepresented minority candidates, and physically challenged students are particularly encouraged. Spring graduates are not eligible.

The research will be conducted under the supervision of Professors Anant Godbole, Michele Joyner or Ariel Cintron-Arias at East Tennessee State University, located in the scenic Northeastern corner of the state. Each student will receive a stipend of $4,500 and a $1,500 travel allowance. We will pay for university housing.

The ideal candidate for this REU program would have taken a wide variety of upper-level Mathematics classes. For Probability and Combinatorics, these would include some of the following: Probability, Discrete Mathematics, Real Analysis. Only those students who have taken a course in ordinary differential equations and linear algebra will be considered for the modeling and computation problems. Previous programming experience in either Matlab, Python or R is strongly desired but not required.

A distinguished academic record, and indication of research interest or potential are essential for both sets of projects. Make sure you check the CRITERIA FOR SELECTION section for more details.

Further information can be obtained by contacting the Project Director (Anant Godbole) at:

Department of Mathematics and Statistics, East Tennessee State University, Box 70663, Johnson City, TN, 37614.
E-MAIL: godbolea@etsu.edu; FAX: (423)-439-8361.

ALL APPLICATION MATERIALS MUST BE RECEIVED BY E-MAIL (PREFERABLY) OR OTHERWISE BY 11:59:59 pm on FEBRUARY 27, 2015.