

## **Call for Applications: Columbia University and the National Science Foundation Research Program for Undergraduates in Nanotechnology**

**Grantor:** Columbia University

**Closes:** 2/14/2012

**Maximum:** \$6,700.00

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The Columbia University NSEC RPU will continue for one last session in Summer 2012.

Applications are due by February 14, 2012

The Columbia University Center for Electron Transport in Molecular Nanostructures (The Columbia Nanocenter), a National Science Foundation Nanotechnology Center, will support about six outstanding undergraduates as Summer Research Fellows for a 10 week period from May 27 to August 4, 2012. This National Science Foundation - Research Experiences for Undergraduates (NSF-RPU) program provides a \$3500 stipend for each successful candidate, free campus housing (worth \$2700) in which you are expected to reside, and possible assistance with round-trip transportation (up to \$500, if necessary). Those selected will have an opportunity to participate in the activities of one of the nation's outstanding new interdisciplinary Nanoscale Science and Technology Centers, as well as in other exciting research on campus. The Columbia Nanocenter draws faculty from the Departments of Physics, Chemistry, Applied Physics, Chemical Engineering and Electrical Engineering, and includes collaborative research with nearby universities (including CCNY, Barnard College and Rowan University) and industry (including IBM Yorktown Heights and Bell Laboratories, Lucent Technologies).

The Columbia Nanocenter is conducting research that will establish the foundation for new paradigms for information processing through the fundamental understanding of charge transport phenomena unique to nano-scale molecular structures. The research program involves exploration of the structures and electron transport properties of molecular single crystals where electron transport is confined to two dimensions, of carbon nanotubes where transport is in one dimension, and of single molecules assembled onto nano-scale scaffolding.

During the RPU program, students will also be involved in workshops, seminars, visits to local industry, recreational activities, a symposium of presentations by RPU students, and other activities.

Prospective candidates should arrange to have an official transcript forwarded to the Program Coordinator at the address below, along with the completed online application form (including two letters of recommendation - preferably from math, science or engineering professors at their home institution). The deadline for receipt of completed applications is on Feb 14, 2012. Successful candidates will be notified in March.

**MIRT:**

This year the Columbia NSEC program helps introduce the Columbia Materials Interdisciplinary Research Team (MIRT), a program that will also participate in the Research Program for Undergraduates. The Columbia University MIRT, "Building functional nanoarchitectures in van der Waals materials," examines the assembly and physical properties of new composite materials created by "nano-laminating" atomic sheets of different van der Waals materials, which have novel electronic properties and are expected to lead to new nanoelectronic devices. The team will look to exploit a wide range of new material building blocks, including both inorganic and organic materials. The research will focus on understanding the physical principles governing assembly of such materials and examine their distinctive optical, thermal and mechanical properties.

For additional information, please visit the website or contact:

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