

Student Programs at NIST

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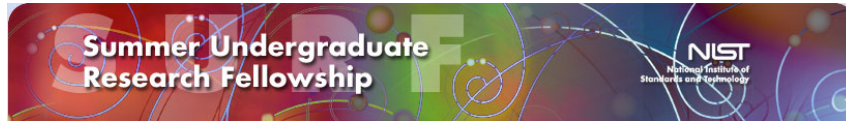


NIST and Academic Programs

- NIST's collaborations with academia, including formal programs and through academic partnerships, make significant contributions to NIST's core mission
- Strategic academic partnerships include:
 - Summer Undergraduate Research Fellowships (SURF)
 - Graduate Student Measurement Science and Engineering (GMSE) Fellowship
 - Postdoctoral Research Associates
 - NIST Summer Institute for Middle School Science Teachers
 - Guest Researchers

Undergraduate Student Programs

Summer Undergraduate Research Fellowship Program (SURF)



SURF NIST Boulder
Summer Undergraduate Research Fellowship



- SURF is a partnership, supported by NIST and the participating colleges/universities, for students majoring in science, mathematics and engineering
- Eleven week fellowships are available in all the NIST laboratories, both in NIST Gaithersburg and NIST Boulder.
- Students apply through their respective university; grants are awarded to the university.
- The 2014 SURF Program:
 - Gaithersburg: 180 participants
 - Boulder: 23 participants
- NIST has benefited not only from former SURF students returning for graduate or postgraduate studies, but several are now permanent NIST staff members
- <http://www.nist.gov/surf>

Summer Undergraduate Research Fellowship Program (SURF)



SURF NIST Boulder
Summer Undergraduate Research Fellowship



An Application consist of two parts:

- (1) Students must provide copies of their transcripts, two letters of recommendation, and a letter of intent or personal statement. The letter should contain information that helps the review committee make an informed decision about the student, such as why the student wants to participate in the SURF program and what areas of NIST research interest the student.
- (2) The student's university must submit a grant proposal that provides details about its academic program and must nominate one or more students.
- A copy of the [FY 2014 Announcement of Federal Funding Opportunity](http://www.nist.gov/surfgaithersburg/upload/201412052014NISTSURFFFO.pdf) <http://www.nist.gov/surfgaithersburg/upload/201412052014NISTSURFFFO.pdf> notice contains the official program announcement with application due dates and all other requirements applicable to the 2014 program, which will be similar to the 2015 FFO, which is currently under review.
- **APPLICATION DEADLINE: February 13, 2015**

Professional Research Experience Program (PREP)

- **PREP** was established in 1991 at NIST's Boulder Laboratories in cooperation with the University of Colorado at Boulder.
- This program awards fellowships to qualified applicants and provides valuable laboratory experience to undergraduates, graduate students, and postgraduates.
- Currently, the Boulder PREP program includes participation from Colorado School of Mines, Colorado State University, University of Colorado at Denver, Metropolitan State University at Denver, and University of Colorado at Boulder. See www.boulder.nist.gov/bdprepo.htm for more information
- There is also a new Gaithersburg PREP for the Material Measurement Laboratory in collaboration with the University of Maryland and Howard University, see www.nist.gov/mml/mml_prep.cfm for information to apply

Graduate Student Programs

Graduate Student Measurement Science and Engineering Fellowship (GMSE) Program

- Partnership with the National Physical Science Consortium (NPSC)
- NIST is one of the sponsoring employers in partnership with NPSC
- Awardees receive \$20,000 annual stipend in addition to tuition coverage and summer salary at NIST
- Over 100 universities participate
- Opportunity to spend summer internship, and/or some or all of graduate research at NIST
- Application time between August and November
- More information at <http://www.nist.gov/iaao/gmse.cfm> and <http://www.npsc.org/>

The Dolphus E. Milligan Graduate Fellowship

- Award is offered in memory of Dr. Dolphus E. Milligan, a preeminent scientist at the National Institute of Standards and Technology (NIST) who was instrumental in the formation of The National Organization for the Professional Advancement of Black Chemists and Chemical Engineers (NOBCChE).
- Candidates must pursue graduate studies in the Department of Chemistry and Biochemistry at the University of Maryland
- Awardees receive \$30,000 annual stipend in addition to tuition coverage, a quarter-time teaching assistantship that provides an additional \$8,000, and a 10-week internship with the Material Measurement Laboratory (MML) at NIST during the summer that precedes the beginning of graduate studies.
- Application deadline in late January
- More information at <http://www.chem.umd.edu/wp-content/uploads/2009/07/MilliganFellowship-flyer-AY11-12.pdf>

Postdoc Student Programs

NIST Postdoctoral Research Associateship Program

- Congressionally-mandated program with a line item in the NIST budget (approximately \$10M per year)
- Limit of 120 slots per year, with central funding available for approximately 40
- Current Annual Salary \$66,256, plus \$3k travel
- U.S. Citizenship required
- To apply, please see :
 - <http://www.nist.gov/oiaa/postdoc.cfm>
 - <http://sites.nationalacademies.org/pga/rap/>

NIST Postdoctoral Research Associateships Program

- Provides two-year temporary appointments for outstanding scientists and engineers
- Awardees chosen through a national competition administered by the National Research Council of the National Academy of Sciences
- Research opportunities include those in chemistry, physics, materials science, mathematics, computer science, and engineering.

Other NIST Postdoctoral Opportunities

- Center for Nanoscale Science and Technology (CNST) –<http://www.nist.gov/cnst/postdoc.cfm>
- NIST Center for Neutron Research (NCNR) –
<http://www.ncnr.nist.gov/jobs/>
- Material Measurement Laboratory (MML) –
<http://www.nist.gov/mml/opportunities.cfm>
- Physical Measurement Laboratory (PML) –
<http://www.nist.gov/pml/resopp/postdoctoral-programs-list.cfm>
- Engineering Laboratory (EL) –
<http://www.nist.gov/el/workwithus.cfm#postdoc>

Other Academic Programs

NIST Summer Institute for Middle School Science Teachers



The NIST Summer Institute for Middle School Science Teachers, a collaboration between NIST and local school districts, is a two-week long workshop designed to support middle school science teachers through a combination of hands-on activities, lectures, tours, and visits with scientists in their laboratories. Planned to coordinate with the middle school curriculum, the teachers are provided with resources and instructional tools for teaching math and science, with an emphasis on the measurement science used at NIST. Led entirely by NIST scientists, the Summer Institute translates the cutting-edge research done in the laboratory into activities intended to be carried out in the classroom. Networking among the scientists and teachers provide long-term resources through the on-going relationships for the teachers and their students. <http://www.nist.gov/iaao/teachlearn/index.cfm>



For information about the upcoming NIST Summer Institute contact
Kate Rimmer, 301/975-3651,
catherine.rimmer@nist.gov

Other Academic Programs

Student Employment and Internships

PATHWAYS Program

- Internships
- Recent Graduates Program

Tours

- Tours of selected NIST Facilities

For additional information on Student employment:

<http://inet.nist.gov/owm/services/studentemployment.cfm>

Additional Opportunities for University Interaction

- **Guest Researchers**

- NIST Domestic Guest Researcher Program - <http://www.nist.gov/tpo/collaborations/guestresearchers.cfm>
- NIST Foreign Guest Researcher Program – <http://www.nist.gov/iaao/intlaffr.cfm#foreign>

- **User Facilities**

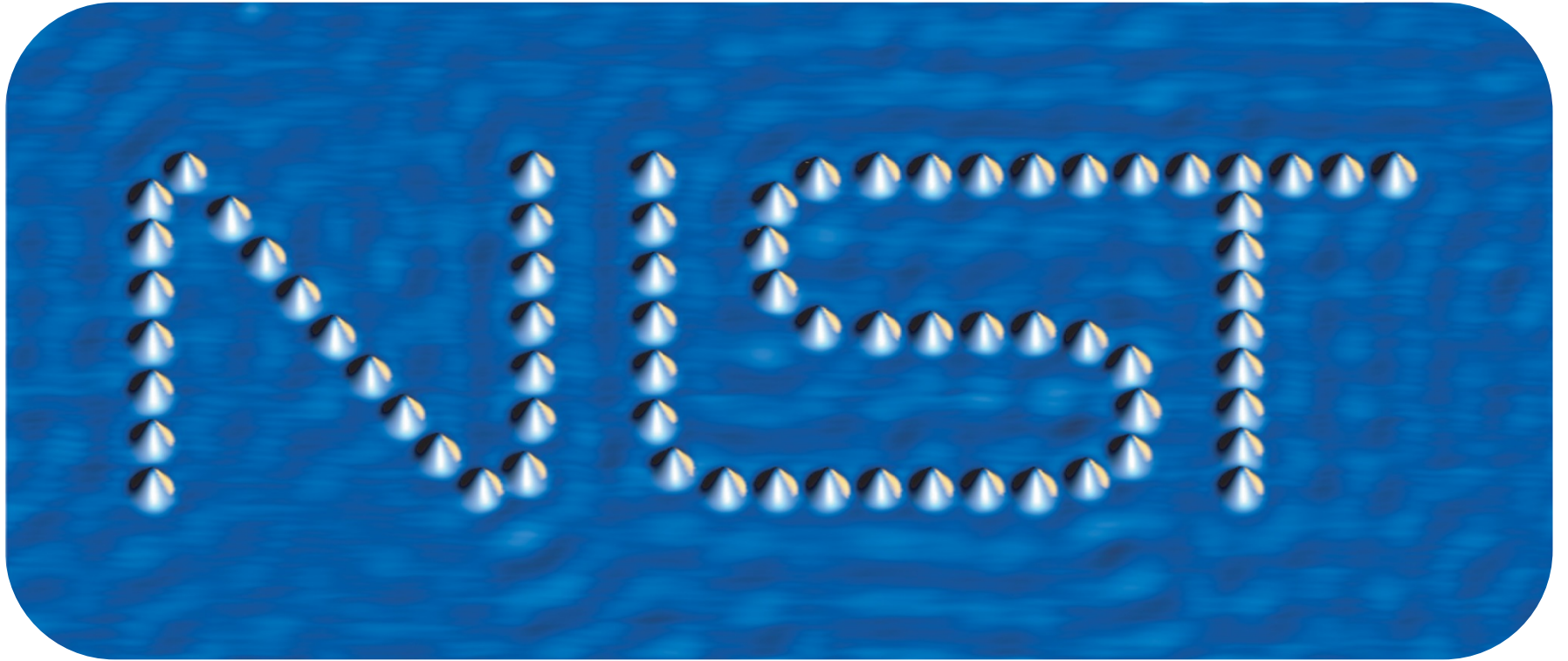
- Access to the NIST Center for Neutron Research (NCNR) for non-proprietary research is provided at no cost through a peer review process. Proprietary research can be performed with full cost recovery (www.nist.gov/ncnr/index.cfm).
- The Center for Nanoscale Science and Technology (CNST) Nanofabrication Facility is a fee-based shared-use facility accessible through a straightforward proposal process designed to get users up and running in weeks (visit www.nist.gov/cnst/index.cfm)

General Programs with Connections to STEM Education

- Education Resources on the Metric System -
<http://www.nist.gov/pml/wmd/metric/education.cfm>
- Standards Education -
<http://gsi.nist.gov/global/index.cfm/L1-8/L2-55>

Importance of NIST ties to Academia

- Postdoctoral scientists and guest researchers from universities (both domestic and international) bring new ideas and skills, adding value to NIST research programs and aiding in achieving our core mission of promoting U.S. innovation and industrial competitiveness
- Engaging with universities in joint institutes and other university collaborations leverages our resources, adding value to research dollars, and giving support to achieving our program goals across NIST
- Undergraduate and graduate student programs at NIST provide opportunities for our nation's next generation of scientists and engineers to engage in world-class research at the premier metrology facility of the U.S., and represents part of NIST's contribution to advance the technical strength of America's future workforce



Questions?