Society of Physics Students
CONNECTING WORLDS 2012

# 2012 SPS Summer Internship Positions

**Policy** Mather Internship (2)

**Research** National Institute of Standards and Technology (2)

**Outreach & Communication**
APS PhysicsQuest
Center for the History of Physics
SPS Career Pathways
SPS SOCK (Science Outreach Catalyst Kit)

## Science Policy: AIP Mather Internship (2 available)

The primary purpose of the AIP Mather Policy Internships (supported by the John and Jane Mather Foundation for Science and the Arts) is to promote awareness of and interaction with the policy process in Washington DC for undergraduate physics students. This is accomplished through direct engagement in science policy issues and efforts in the nation's capital. The AIP Mather Policy Interns will work in Congressional offices on Capitol Hill.

As part of the larger SPS Internship program, the AIP Mather Policy Interns will introduce other SPS interns to the public policy process through one or more field trips to appropriate science policy events or locales--Congressional hearings, governmental agencies and/or facilities, for example.

Qualifications
- Completion of at least two years of college physics
- Interest in science policy
- Basic understanding of how Congress and the US government works
- Excellent communication skills
- Ability to work independently

## Science Research: National Institute for Standards and Technology (2 available)

Interns will work in the Semiconductor & Dimensional Metrology Division at NIST (National Institute for Standards and Technology), www.nist.gov. Specific project descriptions are not available yet, but 2011 intern projects included *Integrated High Switch Test System to Determine Time-Dependent Dielectric Breakdown* and *Effects of Thermal Cycling on Interconnect Structures for 3-D Integrated Circuits Applications*.

Qualifications
- Completion of at least two years of college physics
- Interest in physics research
- Previous laboratory/measurement experience, especially in the area of electronics or materials
- Programming skills a plus

## Science Outreach & Communication: APS PhysicsQuest

The American Physical Society (APS) seeks an SPS intern to help design activities for the middle school level national science outreach project, PhysicsQuest. PhysicsQuest is a story-based activity that exposes middle school students to the fun and relevance of science. APS provides a free PhysicsQuest kit to registered 6-9th grade physical science classes, home school groups, science clubs, and after-school programs. The kit includes a user's manual and materials for four physics experiments. PhysicsQuest aims to teach middle school students physics concepts, but its overarching goal is to give them a positive experience with physics.

The intern will develop extension activities to complement the core PhysicsQuest experiments and will be expected to help write teacher/student instructions for each activity. Examples of last year's PhysicsQuest manual and extension activities can be found on the PhysicsQuest website, www.physicscentral.com/physicsquest.

Qualifications
- Completion of at least two years of college physics
- Demonstrated writing skills
- Interest in public outreach and informal education
- Excellent communication skills

## Science Outreach & Communication: AIP Center for History of Physics

The American Institute of Physics' (AIP) Center for History of Physics seeks an undergraduate physics major with an interest in the history of physics to contribute to a historical web exhibit like those at www.aip.org/history. The intern will identify materials in the collections of the Niels Bohr Library and Archives at AIP related to the designated topic--oral histories, autobiographies, photos, etc. The intern will work with the director of the Center for History of Physics and library specialists to weave these materials into a historical narrative and with the library staff to design the web site. The intern will also use this project for outreach to young science students.

The American Institute of Physics' Center for History of Physics works to preserve and make known the historical record of modern physics and allied sciences. Through documentation, archival collections and educational initiatives, the Center ensures that the heritage of modern physics is safeguarded and its story accurately told.

Qualifications
- Completion of at least two years of college physics
- Interest in public outreach and informal education
- Ability to effectively communicate scientific topics to pre-college students
- Strong writing skills
- Experience with HTML a plus

## Science Outreach & Communication: SPS Career Pathways

**This internship position may be split 50-50 between the SPS Career Pathways project and another SPS project.*

In light of the need to increase both the size and diversity of our nation's STEM (science, technology, engineering, and math) workforce, the National Science Foundation has awarded the Education and Statistical Research Divisions of the American Institute of Physics a grant to learn and share effective practices for the preparation of physics undergraduates for STEM careers. One aspect of this is to develop a workshop on career preparation for undergraduate physics students. This intern will be an integral part of workshop development (e.g. assembling resume-writing materials, developing mock job interview scenarios, and generating graphic representations of statistical information on the careers of physics undergraduates).

Qualifications
- Completion of at least two years of college physics
- Interest in non-traditional STEM careers
- Ability to multi-task and manage time efficiently
- Strong communication skills

## Science Outreach & Communication: The SPS SOCK (Science Outreach Catalyst Kit)

SPS Science Outreach Catalyst Kits, or SOCKs, contain exploratory physics and science activities specifically designed for SPS Chapters and collegiate physics departments to use in outreach presentations to local elementary, middle and high school students. There are usually 1.5-2 interns responsible for creating and testing three main activities and writing instructions for lessons and demonstrations. This year the theme is "Connecting Worlds: Science without Borders," but the science theme for the SOCK has not been chosen yet. For more information on the SOCK, visit http://www.spsnational.org/programs/socks/.

Qualifications
- Completion of at least two years of college physics
- Interest in public outreach and informal education
- Ability to work well with pre-college students
- Ability to effectively communicate scientific topics to pre-college students
- Previous education outreach experience
- Excellent communication skills (including writing)