



The Research
Foundation for

The State University of New York

VACANCY ANNOUNCEMENT

Applications are requested for consideration for the following positions:

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| Title: Summer Research Assistant | Date Posted: February 1, 2024 |
| Department: Physics | Date to be filled: March 15, 2024, or sooner |
| Project Director: Dr. Stephen Padalino | Salary rate: \$15 to \$17 per hour based on experience |
| | Location: SUNY Geneseo |
| | Number of positions: 10 to 15 |

Brief description of duties:

Research will be performed in Geneseo's accelerator lab, JEDI Lab, physics engineering lab, Laser lab and other physics labs in the department. A successful candidate will be expected to use scientific instruments in those rooms. For example:

- Charged particle detectors, gamma and x-ray detectors and neutron detectors
- Fast timing electronics, sophisticated data acquisition (MPA and MCA)
- Nuclear Instrument Modules for timing and energy
- High voltage equipment
- Research grade vacuum systems
- Visible and UV detection systems
- Lasers and laser optics
- Physics department machine shop
- Hand tools
- Power tools
- Handle low intensity radioactive sources
- Cryogenics devices

Accelerator Lab- Freeman

Perform accelerator operations and perform necessary maintenance to accelerator and ion source. Students will also carry out experiments using Rutherford Backscattering (RBS) to characterize targets. Applicants should demonstrate the ability to troubleshoot problems effectively and the ability to document progress by keeping a good laboratory logbook. Prior experience with accelerator operation, surface barrier detectors and associated electronics is preferred but not required to apply.

JEDI Lab - Padalino

Undergraduate researchers working with Drs. Padalino, Fletcher, and Freeman in the JEDI Lab will focus on a muon- time-of-flight system and Gamma-X detection system that will be used to calibrate neutron detector scintillators. Prior experience with hardware-based projects is desirable, but not required.

JEDI Lab - Fletcher

Using the Duoplasmatron Ion Source at the Low Energy Ion Facility, students will produce 25-keV beams of ions to initiate low energy fusion reactions and detect the protons, tritons and ^3He ions produced. Using the Thin Films Deposition system, students will produce thin films to be used as energy filters or as targets for accelerator-based experiments.

Prior experience with hardware-based projects is desirable, but not required.

Engineering Physics Lab - Pogo

Undergraduate researchers working with Dr. Pogozelski in the Engineering Physics Lab will focus on a target chamber detector manipulator system that will be used to control detectors used in the 30R accelerator beam line. Development may include design and testing of both mechanical and electronic subsystems. Students will also work on other similar remotely operated control systems. Students will write code for these systems using LabVIEW, C, and/or Python, for PCs, Arduinos, and Raspberry Pi computers. Students will also use 3D filament and resin printers to construct prototype parts. Prior experience with hardware and software-based projects is desirable, but not required.

Laser Lab - Marcus

Working with Dr. Marcus on particle time of flight detectors. Using high speed electronics and fiber optics.

Machine shop and instrument design - McLean

Support research groups by fabricating parts for research equipment. These parts are primarily machined out of aluminum stock using a vertical milling machine, on which students will be trained. Other possible support work includes electronics design and fabrication, vacuum systems assembly, minor laboratory renovations, and ensuring safety protocols. The work will include ongoing improvement of the instrument shop and storage area organization.

Qualifications:

- Must be able to analyze data with excel and perhaps other software.
- Must be able to use Microsoft Word and PowerPoint.
- Physics majors are preferred but not required.
- Students with greater laboratory and computer experience will be preferred.
- Students with experience in the above “description of duties” section will be preferred.
- Must be able to work with others in a collaborative manner.
- Must be willing to attend national meetings to present the group’s research.

Special notes:

Persons interested in the above position should submit a résumé along with a letter of interest, and the names, addresses and telephone numbers of at least three (3) references to:

APPLY TO:

Project Director’s Name: Dr. Padalino
Address Padalino@geneseo.edu
Address

As an Equal Opportunity / Affirmative Action Employer, The Research Foundation for SUNY will not discriminate in its employment practices due to an applicant’s race, color, creed, religion, sex (including pregnancy, childbirth or related medical conditions), sexual orientation, gender identity or expression, transgender status, age, national origin, marital status, citizenship, physical and mental disability, criminal record, genetic information, predisposition or carrier status, status with respect to receiving public assistance, domestic violence victim status, a disabled, special, recently separated, active duty wartime, campaign badge, Armed Forces service medal veteran, or any other characteristics protected under applicable law. Rev: June 16, 2016