SUNY RF
The Research Foundation for
The State University of New York

VACANCY ANNOUNCEMENT

Applications are invited for consideration for appointment to the following position:

Title: Summer Research Assistant Department: Physics Project Director: Dr. Stephen Padalino	Date Posted: February 24, 2021 Date to be filled: March 30, 2021 or sooner Salary rate: $11 to $17 per hour based on experience Number of positions: 14 to 20

Brief description of duties:

Research will be performed in Geneseo's accelerator lab and JEDI Lab, physics engineering lab, Condensed Matter lab. as well as in the physics labs at Houghton College. 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
- Physics department machine shop
- Hand tools
- Power tools
- Handle low intensity radioactive sources
- Cryogenics devices

Houghton College
Undergraduate researchers working with Dr. Yuly at Houghton College will be studying the feasibility of measuring low-energy nuclear cross sections using inertial confinement fusion techniques. Students will perform experiments to study the propagation, trapping, and detection of radioactive gases in a vacuum system. This will require building high speed ion gauges, electronic controls, and nuclear particle detectors, working with data acquisition electronics, and data analysis. Prior experience with hardware-based projects is desirable, but not required.

JEDI Lab – SUNY Geneseo
Undergraduate researchers working with Dr. Fletcher in the JEDI Lab will focus on several projects - time-of-flight spectroscopy techniques for low energy particles, thin film deposition for accelerator target fabrication, and development of a tube oven system for target preparation. By their nature, these projects require students who are persistent, methodical, good at trouble-shooting, handy with tools and electronic hardware, and highly responsible. Prior experience with hardware-based projects is desirable, but not required.

Accelerator Lab – SUNY Geneseo
Undergraduate researchers working with Dr. Freeman in the 1.7 MV Pelletron accelerator lab will serve as accelerator operators and perform necessary maintenance to accelerator and ion source. Students will also carry out experiments involving calibration of radiochromic film and will help to develop a Rutherford

Backscattering (RBS) platform for characterizing targets. Applicants should demonstrate the ability to troubleshoot problems effectively and the ability to document progress by keeping a good laboratory log book. Prior experience with accelerator operation, surface barrier detectors and associated electronics is preferred but not required to apply.

JEDI Lab – SUNY Geneseo
Undergraduate researchers working with Dr. Padalino 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.

Accelerator Lab – SUNY Geneseo
Undergraduate researchers working with Dr. Padalino in the Accelerator Lab will focus on a Neutron- time-of-flight system that will be used to calibrate neutron detector scintillators. Prior experience with hardware-based projects is desirable, but not required.

Engineering Physics Lab – SUNY Geneseo
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 locate charge particle detectors in the 30R accelerator beam line. The student will also use a 3D printer to construct prototype parts and write computer code in the C and Python languages for Raspberry Pi and Arduino computers. Prior experience with hardware and software-based projects is desirable, but not required.

Condensed Matter Lab – SUNY Geneseo
Undergraduate researchers working with Dr. McLean will focus on design and construction of a vacuum chamber tool for the rapid evaporation of small quantities of material with a very low concentration of short-half-life nuclei. Students are expected to work successfully with both mechanical and electrical hardware, to be methodical in the debugging of the system, and to keep careful records so that processes are repeatable. Strict adherence to safety protocols will be required. Prior experience with hardware-based projects is desirable, but not required.

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 groups 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

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