

PREP Research Associate

This position is part of the National Institute of Standards (NIST) Professional Research Experience (PREP) program. NIST recognizes that its research staff may wish to collaborate with researchers at academic institutions on specific projects of mutual interest, thus requires that such institutions must be the recipient of a PREP award. The PREP program requires staff from a wide range of backgrounds to work on scientific research in many areas. Employees in this position will perform technical work that underpins the scientific research of the collaboration.

Research Title: Atomic Devices and Instrumentation Group Post-Baccalaureate Researcher

The work will entail:

- The candidate will develop and test chip-scale atomic beam clocks as part of the DARPA H6 program. They will work on hybrid-integration of miniature atomic beam systems with integrated photonic elements and low-powered lasers, including fabrication of new atomic beam devices and characterization of systematics and sources of frequency drift. The candidate will collect and analyze spectroscopy and time-series data sets to determine the performance of the developed atomic devices and contribute to internal reports and external publication in scientific journals. Their work may be presented at national and international conferences and workshops.

Key responsibilities will include but are not limited to:

- Development of laboratory test benches to characterize the stability and performance of chip-scale atomic clocks
- Work in the laboratory to test devices and measure clock systematics
- Analyze data on frequency drift and other clock systematics
- Write internal reports and contribute to scientific papers and presentation at conferences

Qualifications

- **U.S. Citizen Preferred**
- B.Sc in Physics (or equivalent)
- Background in optics, lasers, laser spectroscopy, and RF electronics
- One year of experience in developing atomic sensors or miniature atomic devices

Privacy Act Statement

Authority: 15 U.S.C. § 278g-1(e)(1) and (e)(3) and 15 U.S.C. § 272(b) and (c)

Purpose: The National Institute for Standards and Technology (NIST) hosts the [Professional Research Experience Program \(PREP\)](#) which is designed to provide valuable laboratory experience and financial assistance to undergraduates, post-bachelor's degree holders, graduate students, master's degree holders, postdocs, and faculty.

PREP is a 5-year cooperative agreement between NIST laboratories and participating PREP Universities to establish a collaborative research relationship between NIST and U.S. institutions of higher education in the following disciplines including (but may not be limited to) biochemistry, biological sciences, chemistry, computer science, engineering, electronics, materials science, mathematics, nanoscale science, neutron science, physical science, physics, and statistics. This collection of information is needed to facilitate administrative functions of the PREP Program.

Routine Uses: NIST will use the information collected to perform the requisite reviews of the applications to determine eligibility, and to meet programmatic requirements. Disclosure of this information is also subject to all the published routine uses as identified in the Privacy Act System of Records Notices: NIST-1: NIST Associates.

Disclosure: Furnishing this information is voluntary. When you submit the form, you are indicating your voluntary consent for NIST to use of the information you submit for the purpose stated.