**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.

Associate will work on microwave-frequency signal measurements in the linear and nonlinear regime, coupled with thermal imaging and near-field electromagnetic imaging to evaluate the performance, security and reliability of semiconductor devices.

The work will entail:

**Key responsibilities will include but are not limited to:**

* Perform microwave-frequency measurements using tools including a vector network analyzer and/o spectrum analyzer
* Perform thermal and/or near-field imaging measurements with existing experimental setups.
* Perform data analysis, uncertainty analysis, and modeling of solid-state semiconductor circuits or devices.

**Qualifications**

* Bachelor’s degree or equivalent experience in mechanical engineering, electrical engineering, physics or related field.
* Proficiency with scripting (ex. read files, perform calculations, and plot results) in Python, Matlab, or another scientific programming language.
* Proficiency with the mathematical techniques used in physical sciences and engineering, especially linear algebra, differential equations, and statistics. The applicant should be able to discuss the core concepts from upper-level undergraduate courses, and how they apply to real-world situations, in detail without consulting references.
* Proficiency with the physical principles of electromagnetism, circuits, heat transport. The applicant should be able to discuss the core concepts from upper-level undergraduate courses, and how they apply to real-world situations, in detail without consulting references.
* Aptitude for laboratory work, particularly assembling instruments and performing electrical or electromagnetic measurements. This aptitude could be demonstrated through research experience, senior projects, advanced laboratory courses, or hobbies.

What title best suits this PREP project and its requirements?

Choose of the available options on the following link: [FLCDataCenter.com](https://gcc02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.flcdatacenter.com%2FOesWizardStep2.aspx%3FstateName%3DColorado&data=04%7C01%7CPREPboulder%40nist.gov%7Cb57efe197681406c6ac908d9162ea490%7C2ab5d82fd8fa4797a93e054655c61dec%7C1%7C0%7C637565211849975696%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C1000&sdata=pZMCka1XCCRNAyLVe7LrkKoJeZCjLdN98dSIBOf%2F%2FJo%3D&reserved=0).

[**19-2012.00**](http://online.onetcenter.org/link/summary/19-2012.00)**Physicists**

Conduct research into physical phenomena, develop theories on the basis of observation and experiments, and devise methods to apply physical laws and theories.
[View Wages for OES/SOC 19-2012: Physicists](https://www.flcdatacenter.com/OesQuickResults.aspx?area=14500&code=19-2012&year=21&source=2)

**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)](https://www.nist.gov/iaao/academic-affairs-office/nist-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.