

# Senior Research Associate Position Available at CU DENVER NIST PREP Program

**NIST Organization (Div/Group):** Precision Photonic Synthesis Group

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:**

Low noise optical and microwave systems development

## **The work will entail:**

Candidate will create compact ultrastable laser systems and operate optical frequency combs towards the generation of low noise microwave signals. The PREP associate will be responsible for providing day-to-day laboratory guidance and informal technical advising to a small team of Ph.D. students and postdoctoral researchers, with assistance from NIST staff.

## **General Duties and Responsibilities:**

Build and operate photonic and microwave systems based on optical frequency combs capable of producing state-of-the-art electronic signals with ultralow phase noise, including the design of phase-locking electronics; Design and operate ultrastable optical oscillators that are engineered towards compact photonic systems used in microwave generation; Use advanced digital sampling techniques to characterize microwave signals with ultralow phase noise.

## **Qualifications:**

- PhD in electrical engineering, physics, optics or equivalent
- Experience with optical frequency combs, microwave electronics, vacuum systems, and digital electronics
- Preferred experience with optical phase locked loops and Pound-Drever-Hall locking

## **NIST Sponsor Name:**

Franklyn Quinlan ([franklyn.quinlan@nist.gov](mailto:franklyn.quinlan@nist.gov))

**Level of Appointment :**

Senior Research Associate- An individual holding a doctoral degree for more than five (5) years. PREP researchers participating as senior research fellows are eligible to collaborate with NIST on research projects for five (5) years in this category.

**Salary Determination:** \$103,000 - \$110,000

**Start date :** 2025-04-01

**End date:** 2028-03-15

**How to Apply:**

For possible consideration and to apply to this position, qualified candidates should send a current CV, including contact information for three references and a publication list, to Hamid Fardi ([hamid.fardi@ucdenver.edu](mailto:hamid.fardi@ucdenver.edu)). Please submit a single pdf file.

**CU Denver NIST PREP\* posting:**

<https://engineering.ucdenver.edu/research/prep-research program>

\*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.