ITL Opportunity Description Template

TITLE: Development of quantum networking devices and systems and implementing advanced quantum experiments (U.S. Citizens preferred)

Overview: The Information Technology Laboratory of the National Institute of Standards and Technology is seeking qualified candidates for the position of research physicist. The position will be a senior research physicist performing advanced quantum optical experiments. The position requires the development of novel quantum optical devices, systems and tools that will be deployed in challenging field experiments. These devices, systems and tools include single photon sources and converter devices developed from nanophotonic integrated optics devices based on novel materials such as silicon carbide; entangled photon pair sources based on a range of quantum technologies; high-performance single photon detector systems based on cryogenically cooled superconducting nanowires and more. Field experiments include distributing entanglement over long distances with high timing precision and high fidelity; implementing various entanglement distribution schemes including polarization and time-bin; advanced quantum related metrology based on quantum or single photon processes.

Key responsibilities will include but are not limited to:

- Conceptualizing novel and useful quantum optical research ideas and their associated experiments.
- Developing devices and systems for use in quantum optical and QIS related experiments.
- Performing advanced quantum optics and quantum networking field experiments.
- Presenting results at internal and external meetings and conferences.
- Producing high-quality publications based on research and results.
- Ensuring that results, protocols, software, and documentation have been archived or otherwise transmitted to the larger organization.

Qualifications

- US citizenship preferred.
- A PhD degree in Physics or related field.
- 5 or more years of relevant advanced experimental experience with a strong record of highly cited publications in high-quality relevant scientific journals.
- Expertise in Quantum Optics, Quantum mechanics + Quantum Information Systems (QIS) including but not limited to SNSPD (design, build and characterize), EPS (design, build and characterize), integrated optical systems (design and characterize).
- Ability to build complex and extensive quantum optical experiments.
- Ability to develop prototypes and deployable tools used in advanced quantum field experiments.
- Strong oral and written communication skills and strong presentation skills.

Employment Terms: This opportunity is to be an associate researcher in the NIST Quantum Information Group for a term of 2 years, with options to renew and/or pursue longer term federal employment. Associate researchers are NOT Federal Employees, but they work aside NIST researchers. Relocation expenses will not be provided.

Salary: $112,000 - $132,000

How to express interest: Candidates (US Citizens preferred) who meet all of the required qualifications and who would be interested in taking this position are invited to express their interest in the position by sending an updated CV to Dr. Oliver Slattery via oliver.slattery@nist.gov.