College of Science and College of Engineering: Multiple Senior Faculty Positions in Quantum Information Science

Job Summary

The Departments of Physics & Astronomy, Chemistry, Computer Science, and Mathematics in the College of Science, and the Elmore Family School of Electrical and Computer Engineering in the College of Engineering at Purdue University invite applications for multiple senior faculty positions in Quantum Information Science (QIS) to begin August 2024. These positions will be tenured associate/full professor level appointments. When appropriate, successful candidates may be considered for joint appointments across Departments or Colleges.

Quantum Information Science is at the frontier of several traditional research disciplines including but not limited to condensed matter physics, atomic, molecular, and optical physics, information theory, pure and applied mathematics, computer science, chemistry, electronics, photonics, and nanotechnologies. QIS strives to harness the defining quantum mechanical properties of superposition and entanglement to provide breakthrough advances for computing, sensing, secure communications, and novel device functionalities. As such, our QIS initiative is part of a large-scale interdisciplinary hiring effort across key strategic areas in Physics and Astronomy, Chemistry, Computer Science, Mathematics, and Electrical and Computer Engineering.

The College of Science is Purdue's second-largest college, comprising the physical, computing, and life sciences. The College of Engineering's Elmore Family School of Electrical and Computer Engineering (ECE) is the largest academic unit at Purdue and the largest ECE department in the US. These new faculty positions come at a time when both Colleges' leaderships have committed to significant investment in QIS. Both Colleges are especially seeking to enhance our existing strengths in research at the interface of physical sciences (Chemistry and Physics) in tandem with Computer Science and Mathematics, and Engineering through strategic hiring of creative scientists and engineers to be part of the cutting-edge interdisciplinary environment at Purdue University, which has recently launched a new major initiative, [Purdue Computes](#), that supports and connects computing, AI, semiconductors and quantum. The QIS community at Purdue will further benefit from the resources and support in Purdue University's Discovery Park and its interdisciplinary centers, particularly the [Purdue Quantum Science and Engineering Institute](#) (PQSEI) and [Birck Nanotechnology Center](#) (BNC).

Target Areas

Experimental or theoretical studies in quantum computing, quantum sensing, quantum communication or other areas of quantum science and quantum technologies. Examples of targeted areas of interest include, but are not limited to: Design, modeling, fabrication, and characterization of physical platforms for QIS. Synthesis and novel experimental probes of quantum materials and quantum matter. Quantum and quantum-inspired algorithms and their scientific or practical applications. Quantum related pure and applied mathematics such as quantum invariants, quantum algebra and quantum simulation. Algorithmic foundations and programming paradigms of quantum computing; fault-tolerant quantum computation and error correction; quantum cryptography; quantum information theory.

Qualifications
Candidates must have a PhD in physics, chemistry, computer science, mathematics, engineering, or other closely related field, with demonstrated success leading a vibrant independent research program, as well as a strong commitment to excellence in teaching. Successful candidates are expected to lead a vital and sustainable research program supported by extramural funding and teach courses at the undergraduate and/or graduate level.

The Departments and Colleges: The College of Science and College of Engineering and their departments and schools have launched initiatives in new emerging areas, and committed the resources necessary to make the new growth impactful. Under the QIS initiative and other related programs, over 12 new faculty members have been hired in the past 3 years in the College of Science and College of Engineering. To learn more please visit departmental websites: https://www.physics.purdue.edu, https://www.chem.purdue.edu, https://www.math.purdue.edu, https://www.cs.purdue.edu, https://engineering.purdue.edu/ECE.

Purdue itself is one of the nation's leading land-grant universities, with an enrollment of over 49,000 students primarily focused on STEM subjects. For more information, see https://www.purdue.edu/purduemoves/initiatives/stem/index.php. The new Purdue Indianapolis campus may bring additional long-term opportunities based in Indianapolis.

Application Procedure
Applications need to be submitted to

https://careers.purdue.edu/job-invite/28723/

and must include (1) a complete curriculum vitae, (2) a list of publications, (3) a statement of present and future research plans (4-page limit), and (4) a statement of teaching philosophy. The candidate should select an intended home department (from Physics and Astronomy, Chemistry, Mathematics, Computer Science, and Electrical and Computer Engineering) for the application (while successful candidates may be later considered for joint appointments involving additional departments when appropriate). In addition, candidates should arrange for at least 3 letters of reference to be sent to qissearch@purdue.edu. Questions regarding the positions and search may also be directed to qissearch@purdue.edu. Note there is also a concurrent search targeting junior (assistant/associate professor level) appointments https://careers.purdue.edu/job-invite/28704/

Applications completed by January 5, 2024 will be given full consideration, although the search will continue until the position is filled. A background check is required for employment in this position.

 Purdue University is an EEO/AA employer. All individuals, including minorities, women, individuals with disabilities, and veterans are encouraged to apply.