

Women in Quantum seminar series presents: **Dr. Patty Lee (Quantinuum)**



## **Path to Scale QCCD Architecture for Trapped Ion Quantum Computers**

**Wednesday, March 5th in CNSI auditorium**

The quantum charge-coupled device (QCCD) architecture enables trapped ion systems to scale up to a large number of qubits while maintaining high-fidelity operations in the physical layer. Recent key demonstrations, such as quantum supremacy with random circuit sampling, fidelity improvement with encoded qubits, and digital quantum simulation of non-Abelian topological order, underscore the computational capabilities of Quantinuum's H2 system, currently operating with 56 qubits. Along with advancements in ion trap microfabrication, transport control, and integrated photonics, these demonstrations establish a robust foundation for achieving quantum advantage and fault-tolerant quantum computing.

### **Schedule:**

**3pm: Coffee & cookies - CNSI lobby**

**3:30 - 4:30 pm: Seminar - CNSI auditorium**

**5 - 7pm: Networking and Happy Hour with Dr. Lee - Broxton**



**Dr. Lee is the Chief Scientist for Hardware Technology Development at Quantinuum.** Patty focuses on the technology roadmap to achieve fault tolerance and scaling Quantinuum's H-Series trapped ion quantum computers. She is best known for her work on phase control of geometric phase gates in trapped ions. Patty brings her expertise in quantum information science from her experimental work with neutral atoms and quantum networks at US Army Research Laboratory and NIST, as well as experience in defense industry from her prior position as a scientist at Lockheed Martin. She holds a Ph.D. in atomic physics from University of Michigan at Ann Arbor and a B.S. in physics from California Institute of Technology.

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