

## RUSSELL STUTZ



**Tuesday, November 14 @ 3:00PM,  
Shannon Room (54-134, Eng 4)**

### **“Advancing Trapped Ion Quantum Computers”**

**Abstract:** Decades of research across academia, national labs, and industry have led to the development of trapped ion quantum computers featuring dozens of qubits at error rates below other competing technologies. Performance and limitations of one such system based on Ytterbium qubits will be discussed. Moving to higher performance will require advances in areas such as ion transport, gate operations, and system architecture. Switching to Barium qubits is one promising path to developing near term quantum computers that push deeply into the regime where classical simulations of the machine will not be possible. Producing even higher performance machines will eventually require quantum error correction so a brief overview of some early demonstrations will be given.

**Bio:** Dr. Russell Stutz is currently leading the Commercial Hardware group of Quantinuum, where he is responsible for the design and build of commercial quantum computers. He received his Bachelor of Science in Physics from the University of Kansas, taking a commission in the US Air Force through the ROTC program upon graduation. As an Air Force officer, he worked on laser research at the Air Force Research Lab, Directed Energy Directorate at Kirtland AFB, NM. Dr. Stutz received his PhD from the University of Colorado-Boulder in atomic, molecular, and optical physics in 2010. After receiving his PhD, Dr. Stutz has worked industrial research and development at AOSense, a company developing quantum sensors, as well as Lockheed Martin. He started at Honeywell Quantum Solutions, a precursor of Quantinuum, in 2016 as one of the first employees at the Broomfield, CO site.