



Quantum Information Program

Advancing the understanding and mastery of quantum systems to enable the manipulation of information with greater sensitivity, speed, and security than is possible with classical information processing methods.



About

The program spans the entire breadth of Quantum Information Science (QIS) through focused research programs and by utilizing its unique technical capability areas:

- micro-electronics and quantum device fabrication nanotechnology
- tailored materials
- high-performance computing

Expertise



Qubits
Qubit design/ development/ fabrication/ testing, entanglement, noise modeling, and design tools



Communication
Quantum Key Distribution (QKD), photon source development, single photon detectors, quantum networking



Quantum Engineering Architectures, robust controls, qubit performance characterization, and quantum-enabled devices via atom-by-atom fabrication



Sensing
Ultra-high precision timing, acceleration sensing, magnetometry, and electric field sensing; sensing employing both atom and matter wave interferometry



Algorithms / Apps
Algorithm development, computing on quantum sensed data, resource estimation, and quantum-inspired algorithms



Engineering
Dramatic size-, weight-, and power- reductions for quantum systems, control electronics, lasers, photon sources, vacuum packaging, and system integration



Modeling and Simulation
Quantum device modeling, design toolkits, error correction simulators

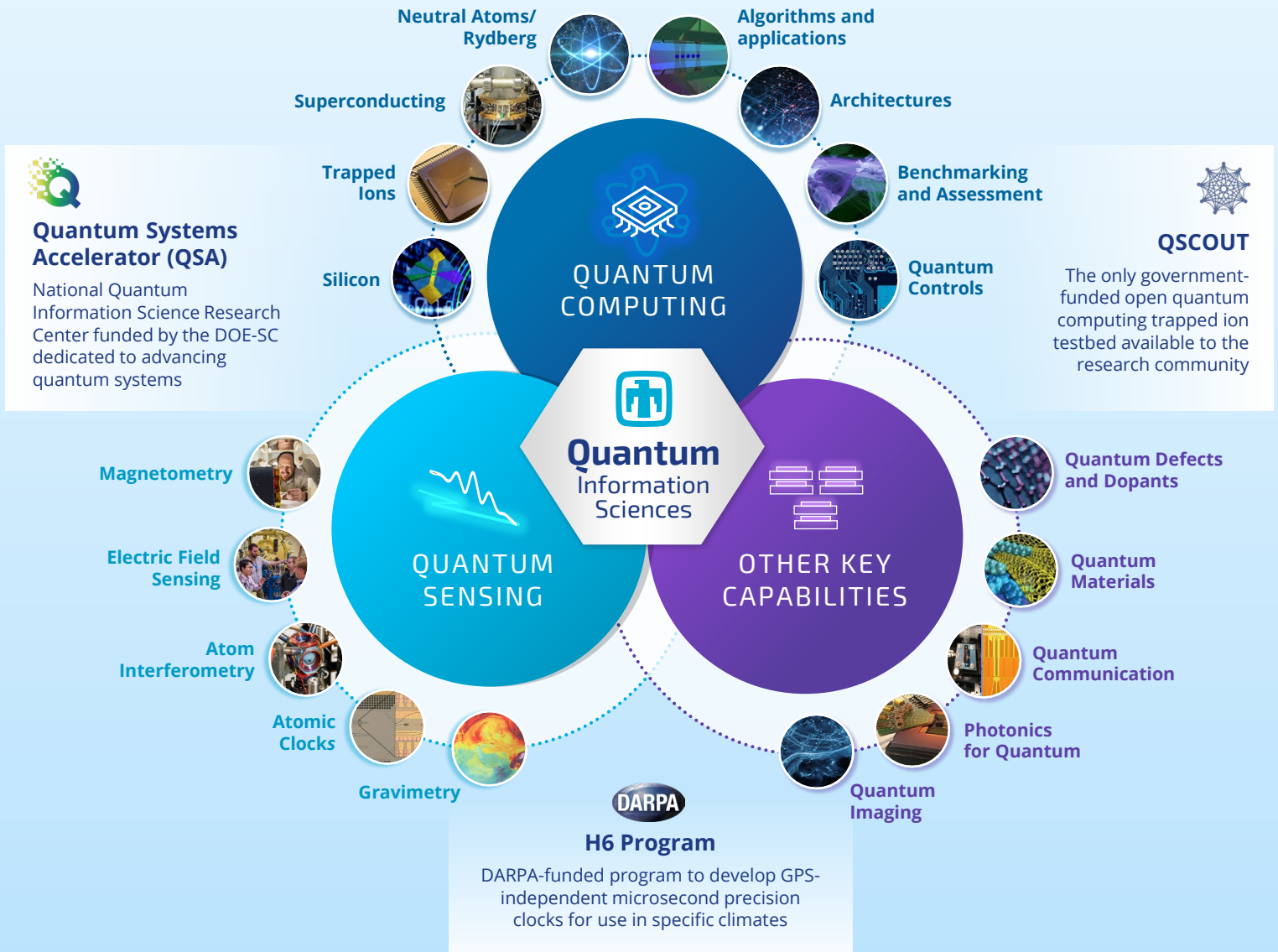
Hiring | We are looking to hire multiple positions in disciplines including:

- physics
- materials science
- chemistry
- computer science
- mechanical engineering
- electrical engineering
- mathematics
- and more...



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Building on more than **18 years** of successful investments and R&D activities, Sandia will continue to utilize its unique and exciting capabilities to push the boundaries on the art of the possible.



I chose to start my career at Sandia because of the breadth of the research happening here and the opportunities this brings for cross-disciplinary collaboration.

– Alicia Magann, Harry S. Truman Fellowship Postdoc

Sandia allows me to learn from world-class experts in quantum science and gain a big-picture perspective on critical challenges in the field while working with state-of-the-art technology – it's an excellent place to start a research career.

–Matt Chow, year-round QIS intern



sandia.gov/quantum

If you would like additional information regarding opportunities for how you could engage in unique, challenging, and meaningful work in the pursuit of national security, feel free to contact us at quantum@sandia.gov



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