Emerging qubit technologies (2:30-3:45)

In this breakout session, we will discuss alternatives to ions and superconducting circuits, including promising qubit technologies that could be mature enough for integration into a quantum testbed within the next few years. The session will begin with a few brief presentations that lead into a discussion of the following questions:

- What are the alternatives to trapped ions and superconducting qubits?
- Are these alternatives sufficiently mature for use in a quantum testbed? If not, what advances would be required to reach testbed level?
- Are there scientific applications to which these technologies are particularly well or poorly suited? Do any have unique advantages?

Speakers:

1. Dwight Luhman, Sandia National Lab
   A Multi-qubit Testbed using Silicon Quantum Dots
2. Michael Martin, Sandia National Lab
   Scaling Neutral Atom Qubits for Quantum Information and Simulation
3. Peter MacMahon, Stanford University
   Computing Using Networks of Optical Parametric Oscillators and Measurement Feedback

Session chair: Raphael Pooser