Shannon Harvey

Friday, May 12: Seminar at 11:00AM, Tesla Room (Eng 4, 53-125)

"Next generation technologies for quantum computing and sensing"

Abstract:
In recent years, quantum technologies have made spectacular progress towards applications in computing, simulation and sensing. The field is now moving from proof-of-principle experiments to demonstrating scalable, useful quantum devices, which has made quantum science increasingly interdisciplinary, as broad expertise is needed. Spin qubits offer a promising pathway to building a viable quantum computer, given their potential for scaling using established semiconductor manufacturing techniques, but they are held back by their extreme sensitivity to their environment. In this talk, I will discuss my research on combating this sensitivity by increasing coherence times and enabling long-distance coupling in spin qubits. In addition, I will present my research into a new family of unconventional superconductors, the infinite-layer nickelates, and discuss how techniques from quantum materials can be integrated into engineering approaches to advance spin qubits to become a leading platform for quantum information and enable quantum sensing experiments to drive new discoveries.

Bio:
Dr. Shannon Harvey is a research associate at Stanford University and SLAC, studying superconducting qubits. Prior to that, she was a postdoctoral scholar at Stanford, researching the superconductivity in nickelates. She received her PhD. in Physics from Harvard University in 2019, where she worked on spin qubits. While there, she received the Goldhaber Prize for excellence in experimental research and White Teaching Prize from the Harvard Physics Department.

****Pizza lunch for students directly following seminar****

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