

CMP Seminar
Michigan State University

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***Tools for Building Large-Scale Quantum Processors with
Superconducting Circuits***

Superconducting circuits based on Josephson junctions are one of the leading candidates for the quantum bits, or qubits, of a large-scale quantum information processor. There have been significant advances in the performance of superconducting qubits over the past decade and there is currently rapid progress in the development of systems with up to tens of qubits. In order to build to yet larger systems, qubit coherence will need to be improved further and new techniques will need to be developed to implement more of the qubit control and readout in the low-temperature environment. I will describe our efforts on integrating superconducting classical digital circuitry with superconducting qubits for coherent control and measurement. In addition, I will discuss some of our work on tunable qubits with reduced sensitivity to magnetic flux noise for addressing frequency crowding issues in large qubit arrays.

Monday, October 30, 2017
4:10 p.m.
BPS 1400
Prof. Stuart Tessmer - Host