

# Princeton Summer School on Condensed Matter Physics

August 7 – 10 – Princeton Center for Theoretical Science

Day 1	Monday, August 7	Day 2	Tuesday, August 8
8:30 – 9:15	Breakfast	8:30 – 9:30	Breakfast
9:15 – 9:30	Opening remarks	9:30 – 10:45	<b>Introduction to Complexity Theory for Physicists</b> <i>Christopher Laumann, Boston University</i>
9:30 – 10:45	<b>Overview of Quantum Computing and Physical Implementations</b> <i>Stephen Lyon, Princeton University</i>	10:45 – 11:00	Coffee Break
10:45 – 11:00	Coffee Break	11:00 – 12:15	<b>Entanglement as a Tool in Condensed Matter</b> <i>Anushya Chandran, Boston University</i>
11:00 – 12:15	<b>Quantum Annealing 1: Fundamentals</b> <i>Richard Harris, D-Wave Systems Inc.</i>	12:15 – 1:30	Lunch
12:15 – 1:30	Lunch	1:30 – 2:45	<b>Quantum Annealing 2: Superconducting Circuit Implementation</b> <i>Richard Harris, D-Wave Systems Inc.</i>
1:30 – 2:45	<b>Introduction to Quantum Circuits</b> <i>Andrew Houck, Princeton University</i>	2:45 – 3:00	Coffee Break
2:45 – 3:00	Coffee Break	3:00 – 4:15	<b>Surface Codes and Quantum Error Correction</b> <i>Andrew Houck, Princeton University</i>
3:00 – 4:15	<b>Entanglement as a resource in Quantum Computation</b> <i>Anushya Chandran, Boston University</i>		
Day 3	Wednesday, August 9	Day 4	Thursday, August 10
8:30 – 9:30	Breakfast	8:30 – 9:30	Breakfast
9:30 – 10:45	<b>Quantum Satisfiability</b> <i>Christopher Laumann, Boston University</i>	9:30 – 10:45	<b>Cavity-coupled spin qubits</b> <i>Jason Petta, Princeton University</i>
10:45 – 11:00	Coffee Break	10:45 – 11:00	Coffee Break
11:00 – 12:15	<b>Topological entanglement: the toric code</b> <i>Anushya Chandran, Boston University</i>	11:00 – 11:45	<b>Photoemission, masing, and strong-coupling in cavity-coupled charge qubits</b> <i>Jason Petta, Princeton University</i>
12:15 – 1:30	Lunch	12:15 – 1:30	Lunch
1:30 – 2:45	<b>Quantum Annealing 3: Simulation of a 3-dimensional transverse Ising system with a D-Wave quantum annealing processor</b> <i>Richard Harris, D-Wave Systems Inc.</i>	1:30 – 2:45	<b>Donor-bound electron spin qubits in Si and electrons floating on superfluid He.</b> <i>Stephen Lyon, Princeton University</i>
2:45 – 3:00	Coffee Break		
3:00 – 4:15	<b>Quantum cavity techniques</b> <i>Christopher Laumann, Boston University</i>		

# Princeton Map PSSCMP

- A** Scully Hall
- B** PCTS/Jadwin Hall  
4th Floor
- C** Parking (Day time  
visitors only)
- D** Conference and  
Event Services  
office
- E** Public Safety

