Day One

7:00  Continental Breakfast

8:00  Welcome

8:10  Opening Remarks  
Marion Scott, SNL, Director, Information Systems Analysis

8:25  Donor Based Quantum Computing in Silicon  
Lloyd Hollenberg, University of Melbourne, Professor

9:00  Addressing the Charge and Spin of a Single Dopant Atom in a Nano MOSFET  
Sven Rogge, TU Delft, Professor

9:30  Progress Towards Quantum Logic using Donor Electron Spin Qubits in Silicon  
Jeffery Bokor, LBL

10:00 Refreshments, Posters & Discussion

10:30  MOS Architecture for Coherent Control and Read-Out of Single Dopant Electron Spin Qubits in Si  
Dr. Andrea Morello, University of New South Wales, CQCT

11:00  Single P Dopant State Spectroscopy using Silicon SETs  
Dr. Hans Huebl, University of New South Wales

11:30  External Field Control of Donor Electrons at the Si-SiO2 Interface  
Belita Koiller, University of Rio de Janeiro, Physics Institute, Professor

12:00 Lunch and Break Out Meeting

1:30  STM-Patterned P-Donor Based Planar Quantum Dot Structures in Silicon  
Martin Fuchsle, University of New South Wales, PhD student

2:00  Single Ion Implantation using Focused Ion Beam and Geiger Mode Detection  
Ed Bielejec, SNL, Member of Technical Staff, Radiation – Solid Interactions

2:30  Applications of Electrically Detected Magnetic Resonance: Towards Spin Based Quantum Electronics in Silicon.  
Dr. Dane McCamey, University of Utah

3:00  Refreshments, Posters & Discussion

3:30  Si QC Work  
Sankar Das Sarma, University of Maryland, Professor

4:00  Pulsed Electron Spin Resonance Measurements of Spin Coherence in Si Structures  
Shayam Sankar, Princeton University

4:30  Spin-Dependent Scattering in a Silicon Transistor  
Rogerio de Sousa, University of Victoria, BC, Assistant Professor

5:00  Poster Session - Room open for discussion and poster viewing
QUANTUM WORKSHOP
August 19, 2008
Albuquerque, New Mexico

Day Two

7:00   Continental Breakfast & Announcements

8:00   Error Correction for Solid-State QC
Dr. Austin Fowler, University of Waterloo, Ontario, Institute for Quantum Computing

8:30   Protecting Quantum Information with Optimal Control
Dr. Mathew Grace, SNL, Postdoctoral Appointee Thermal / Fluid Science and Engineering

9:00   Message Passing in Fault Tolerant Quantum Error Correction
Dr. Ashley Stephens, University of Melbourne

9:30   Refreshments, Posters & Discussion

10:00  Universal Electrical Wire Communication within QI-Processors
Eli Yablonovitch, University of California –Berkeley, Professor

10:30  Electrons on He
Steve Lyon, Princeton University, Professor

11:00  Cryogenic CMOS (?)
Martin Peckerar, University of Maryland, Professor

11:30  Si Foundry for Single Electron Devices and Circuit Assisted Read-Out
Malcolm Carroll, SNL, Member of Technical Staff, Photonic Microsystems Technology, or
Mike Lilly, SNL, Member of Technical Staff, CINT Science

12:00  Lunch

1:00   TBA
Christie Simmons, University of Wisconsin, Student

1:30   Accumulation-Mode Quantum-Dot Devices
Andrew Hunter, HRL

2:00   Ge/Si Nanowire-Based DQD w/ Charge Sensor
Yongjie Hu, Harvard University,

2:30   Refreshments, Posters and Discussion

3:00   Electron-Phonon Interaction Induced Dephasing of Exchange Coupled Spin Qubits in Si Nanostructures
Xuedong Hu, SUNY Buffalo, Professor

3:30   SOI Structures for Quantum Computing
Dr. David Williams, Cambridge

4:00   Two Dimensional Electron Systems with Mobility Exceeding 105 cm2/Vsec On Hydrogen-Terminated
Silicon Surfaces
Bruce Kane, University of Maryland, Professor

4:30   Valley Splitting in Quantum Dots
Dr. Mark Friesen, University of Wisconsin

5:00   Modeling Physical Qubits Using Tight-binding and Effective Mass Theories
Rick Muller, SNL, Member of Technical Staff, Multiscale Dynamics Materials Modeling