**Scientific Program for the 2017 Lawrence Workshop on Solid-State Technology**
**ASU University Club**

**Thursday February 23rd**

**7:30 – 8:30 AM** ***Breakfast***

**8:30 - 8:35 AM** **Welcoming remarks, Nate Newman**
**8:35 – 8:40 AM** **Introduction, Monte Lawrence**

**AM Session chair:** ***Mac Robinson (Lawrence Semiconductor Research Lab)***

**8:40 - 9:25 AM** ***Eli Yablonovitch, U.C. Berkeley***
**Plenary** **What does the Clock Speed of my Computer have to with the Fundamental Constants of Nature, h, c, q, m?**

**9:25 – 10:10 AM** ***David Ferry, Arizona State University***
**What materials are needed to reduce the energy consumption of circuits and improve sensitivity of detectors?**

**10:10 -10:25 AM** ***Coffee break***

**10:25-11:10 AM** ***Lars Samuelson, Lund University***
**Semiconductor nanowires as enablers of novel functional materials and devices**

**11:10– 11:55 AM** ***Bob Wisnieff, IBM Microelectronics Research Laboratory***
**What technology will dominate future digital microelectronics?**

**11:55 AM –1:30 PM** ***Lunch***

**PM Session chair:** ***Jim Huffman (Lawrence Semiconductor Research Lab*)**

**1:30 – 2:15 PM** ***Mark van Schilfgaarde, Kings College London***
**Electronic structure theory: what are its challenges and, if they can be solved, its future capabilities?**

**2:15 – 3:00 PM** ***Bob Buhrman, Cornell University***
**Magnetism, what are the performance limits for memory and can it make useful logic circuits?**

**3:00-3:20 PM** ***Coffee break***

**3:20 – 4:05 PM** ***Artem Smirnov (VP of Strategic Projects) or Michl Binderbauer (CTO), Tri Alpha Energy***
**Progress and challenges in Tri-alpha Energy's quest to achieve a practical fusion reactor**

**4:05 -4:50 PM** ***David Larbalestier, Florida State University and the National High Field Magnet Laboratory***
**Superconductivity, what are its ultimate capabilities for power distribution and high-field magnets?**

**4:50 -5:35 PM** ***Chris Lirakis, IBM Advanced Quantum Devices Laboratory***
**The potential of Quantum computing**

**6:00 –7:15 PM** ***Evening dinner banquet***

**Friday February 24th**

**7:30 – 8:30 AM** ***Breakfast***

**AM Session chair:** ***Mahmoud Vahidi (Lawrence Semiconductor Research Lab)***

**8:30 - 9:15 AM** ***Stuart Lindsay, Arizona State University***
**How microelectronic advances have enabled the new revolution in genetic and medical technology**

**9:15 – 10:00 AM** ***Subhash Mahajan, U. C. Davis***
**Tailoring dimensionality in semiconductor structures**

**10:00-10:20 AM** ***Coffee break***

**10:20-11:05 AM** ***Suman Dutta, Notre Dame***
**The future of microelectronics and the fundamental limits to semiconductor device performance**

**11:05 – 11:50 AM** ***Jerry Woodall, U.C. Davis***
**Solar cell technology challenges: moving beyond subsidies and power buy-back**

**11:50- 12:00 noon** **Closing remarks by Nate Newman**

**12:00 noon** ***Box Lunch***

**1:15 -2:45 PM** **Optional tour of the LeRoy Eyring Center for Solid State Sciences**
***http://le-csss.asu.edu/***