

**John Martinis**, University of California, Santa Barbara, Dept of Physics

Citation:

"The Fritz London Memorial Prize is awarded to Prof. John M. Martinis in recognition of fundamental and pioneering experimental advances in quantum control, quantum information processing and quantum optics with superconducting qubits and microwave photons."



John M. Martinis attended the University of California at Berkeley from 1976 to 1987, where he received two degrees in Physics: B.S. (1980) and Ph.D. (1987). His thesis was a pioneering demonstration of quantum-bit states in superconductors. After completing a post-doctoral position at the Commissariat de l'Energie Atomique in Saclay, France, he joined the Electromagnetic Technology division at NIST in Boulder. At NIST he developed a new fundamental electrical standard based on counting electrons, and invented microcalorimeters based on superconducting sensors for x-ray microanalysis and astrophysics measurements. In 2004 he moved to the University of California, Santa Barbara where he currently holds the Worster Chair in experimental physics. At UCSB, he has continued work on quantum computation, demonstrating a variety of new quantum devices and capabilities. Along with Andrew Cleland, he was awarded in 2010 the AAAS science breakthrough of the year for an experiment showing the first quantum behavior of a mechanical oscillator. He is now working to build the first fault-tolerant quantum computer.