

David Awschalom

LIEW FAMILY PROFESSOR IN MOLECULAR ENGINEERING



David Awschalom is one of the world's leading scientists in spintronics and quantum information engineering. His research involves understanding and controlling the spins of electrons, ions, and nuclei for fundamental studies of quantum systems, as well as potential applications in computing, imaging, and encryption. His group explores optical and magnetic interactions in semiconductor quantum structures, spin dynamics and coherence in condensed matter systems, macroscopic quantum phenomena in nanometer-scale magnets, and implementations of quantum information processing in the solid state. He developed a variety of femtosecond-resolved spatiotemporal spectroscopies and micromagnetic sensing techniques aimed at exploring charge and spin motion in the quantum domain. These measurements resulted in the discovery of robust electron spin coherence, transport of coherent states, and the spin Hall effect in semiconductors.

Dr. Awschalom received his PhD in physics from Cornell University. He worked at the IBM Watson Research Center and later as a Professor of Physics and of Electrical and Computer Engineering at the University of California-Santa Barbara where he served as the Peter J. Clarke Director of the California NanoSystems Institute. Awschalom received the American Physical Society Oliver E. Buckley Prize and Julius Edgar Lilienfeld Prize, the European Physical Society Europhysics Prize, the Materials Research Society David Turnbull Award, the AAAS Newcomb Cleveland Prize, and the International Magnetism Prize and the Néel Medal from the International Union of Pure and Applied Physics. He is a member of the American Academy of Arts and Sciences, the National Academy of Sciences, the National Academy of Engineering, and the European Academy of Sciences.

Peter J. Clarke Professor, University of California, Santa Barbara

Director, California NanoSystems Institute

Director, Center for Spintronics and Quantum Computation

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EDUCATION

PhD, Experimental Physics, Cornell University

BSc, Physics, University of Illinois at Urbana-Champaign