

# *THE Current*

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## **UCSB to Receive More Than \$14 Million in Department of Defense Awards**

UC Santa Barbara will receive more than \$14 million over five years in two awards from the U.S. Department of Defense's Multicampus University Research Initiative (MURI) program.

"The sustained support provided by the MURI program makes it possible for large multidisciplinary teams to make rapid advances in new technologies," said Michael Witherell, Vice Chancellor for Research at UCSB. "This is a very competitive program, and these two UCSB-led groups were reviewed to be at the top in their field."

Witherell noted that the two awards to UCSB represent more than 7 percent of the total of \$191 million granted by the Department of Defense with the MURI program. Both awards are from the Air Force Office of Scientific Research. A total of 27 awards are being granted across the U.S. by the MURI program.

David Awschalom, professor of physics, electrical and computer engineering, and director of UCSB's Center for Spintronics and Quantum Computation, is the principal investigator on a \$7.5 million MURI award for "Quantum Memories in Photon-Atomic Solid State Systems." Awschalom also leads UCSB's California NanoSystems Institute.

"We are excited about launching this extraordinary collaboration with world-leading experts, aimed at integrating atoms, photons, and electron spins in diamond for new chip-scale quantum technologies," said Awschalom. "In particular, this effort includes training a new generation of quantum scientists and engineers."

Awschalom's award will include collaboration with colleagues at California Institute of Technology, Harvard University, University of Iowa, and Iowa State University. Additionally, a unique scientific collaboration and student internship program will be established with Hewlett-Packard Research Labs.

Kwang-Ting "Tim" Cheng, professor in the Department of Electrical & Computer Engineering, is the principal investigator of a \$7 million MURI award for developing solutions for building new three-dimensional integrated circuits that combine current integrated circuit technology with a novel nano-memristor technology.

"If successful, our solution will achieve densities several orders of magnitude higher than existing integrated circuits, and such compact circuits would be used in high-density information processing systems for military applications," said Cheng.

Cheng's award will include collaborations with Stony Brook University, University of Illinois Champaign, and California Institute of Technology.

In addition to these two awards, UCSB is a research partner in an award to UC Berkeley, headed by principal investigator Rachel Segalman. She received her Ph.D. in chemical engineering at UCSB in 2002. The UC Berkeley project is titled "Control of Thermal and Electrical Transport in Organic and Composite Materials Through Molecular and Nanoscale Structures."

Michael Chabynec, UCSB professor of materials, is involved in this project.

Zachary J. Lemnios, assistant secretary of defense for research and engineering, said: "MURIs are an important vehicle for engaging the brightest researchers on ideas with major impact for the department. These projects constitute significant investments in multidisciplinary research with the potential for making rapid progress in cutting-edge science."

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## **About UC Santa Barbara**

The University of California, Santa Barbara is a leading research institution that also provides a comprehensive liberal arts learning experience. Our academic community of faculty, students, and staff is characterized by a culture of interdisciplinary collaboration that is responsive to the needs of our multicultural and global society. All of this takes place within a living and learning environment like no other, as we draw inspiration from the beauty and resources of our extraordinary location at the edge of the Pacific Ocean.