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UCSB PHYSICIST WINS PRESTIGIOUS PACKARD FOUNDATION FELLOWSHIP

Leon Balents, assistant professor of physics at the University of California, Santa Barbara, has recently been awarded the prestigious Packard Foundation Fellowship for Science and Engineering for the year 2000.

Balents, a theoretical physicist, is working on research that may have major impact on the future of computing technology.

He will receive $125,000 a year for five years to continue work on nanoconductors, nanotubes and novel magnetism. Balents recently co-authored two articles on carbon nanotubes in the prominent journal Nature.

Balents' theoretical research ranges broadly over condensed matter physics, the exploration and fundamental understanding of materials as solids or liquids.

"This field of physics is constantly renewed and energized by new materials and material structures," said S. James Allen, chair of the Department of Physics, professor of physics, and director of the Quantum Institute at U C Santa Barbara. "Leon has made important contributions to our understanding of diverse phenomena in glasses, materials in strong magnetic fields, and carbon nanotubes, a material of tremendous scientific interest and potential technical applications."

Carbon nanotubes are lattices of carbon atoms rolled up like a coil of chicken wire. They are one ten-thousandth the thickness of a human hair.

Balents is studying how the spin and charge of electrons act together to produce magnetism in nanotubes. Nanotubes may, someday, be the wires in futuristic "spintronics" technology, using electronic magnetism instead of charge for computing.

In addition to the nanotube work, Balents is developing theoretical models for a variety of other exotic magnetic materials such as low-density electron systems and high-temperature superconductors.

Balents joined the UC Santa Barbara faculty in July 1999, after a year in the theoretical physics department of Bell Laboratories, Lucent Technologies. He received his Ph.D. in physics in 1994 from Harvard University, and spent the next four years as a research fellow at the Institute for Theoretical Physics at UC Santa Barbara.

"In his short but rapidly growing professional career, he has published over 40 scientific articles, filed a patent (which is somewhat unusual for a theoretical physicist), won a National Science Foundation career development award and an Alfred P. Sloan Research Fellowship," said Allen. "And, students have given him high marks for his classroom teaching."

The Packard Foundation Fellowship Advisory Panel, made up of distinguished scientists and engineers, invites the presidents of 50 universities to nominate two young professors each from their institutions every year. The panel carefully reviews the nominations and selects 24 fellows. Candidates must be young faculty members in the first three years of

their faculty careers. The intent of the fellowship program is to provide support for unusually creative researchers early in their careers.

The foundation seeks to support innovative individual research that involves the fellows, their students, and junior colleagues, rather than extensions or components of large-scale, ongoing research programs.

The fellowship may be used for any reasonable research expenditure, including equipment, supplies, technical or secretarial support, graduate student support, travel, as well as salary offset for time released from teaching. The regular salary of the fellow is to be paid by the university.

Editors: A j-peg photo of Leon Balents is available upon request.

The David and Lucile Packard Foundation website on the Fellowship for Science and Engineering is located at:
http://www.packard.org/genericDetails.aspx?RootCatID=3&CategoryID=152&I...

The UC Santa Barbara Physics Department website is located at:
http://www.physics.ucsb.edu

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.