

Architectural Rendering of the new WIN-GEM building.
IMAGE COURTESY STENFORS ASSOCIATES ARCHITECTS



UCLA ENGINEERING TO CONSTRUCT NEW STATE-OF-THE-ART BUILDING

Wileen Wong Kromhout

The U.S. Commerce Department's National Institute of Standards and Technology (NIST) has awarded UCLA's Henry Samueli School of Engineering and Applied Science \$6 million to support the construction of the new state-of-the-art Western Institute of Nanotechnology on Green Engineering and Metrology (WIN-GEM).

The new building will provide core research facilities that will serve UCLA Engineering's "centers of excellence" dedicated to advancing energy conservation technologies for microelectronics and nanotechnology.

WIN-GEM will include 35,000 square feet of laboratory space on four levels to support research on low-power, nonvolatile nanoelectronics; green manufacturing of novel nanomaterial-based energy technologies; and new materials for energy generation, storage and management. The roof of the building will include a solar-cell array for energy supply and power-management experimentation.

"We are grateful to NIST for the opportunity to be able to work on such a groundbreaking project as WIN-GEM," said Vijay K. Dhir, dean of UCLA Engineering. "The world-class facility will allow our faculty to continue their innovative research in areas that will advance essential energy conservation technologies."

The Western Institute of Nanoelectronics (WIN), one of the centers of excellence to be housed in WIN-GEM,

is a consortium of major semiconductor companies in the U.S. and will partner with NIST to address the needs of electronics beyond today's mainstream CMOS (complementary metal-oxide semiconductor) technology.

Currently, the institute focuses on alternate spintronics technology, with an objective of achieving non-volatile electronics by the year 2020 in order to resolve the critical challenges of reducing power dissipation — for next-generation microelectronics, as well as green information technology.

WIN and the Center on Functional Engineered Nano Architectonics (FENA) — another center of excellence, which explores low-cost, high-yield, energy-efficient nanoscale manufacturing technologies for semiconductor devices — have more than 80 principal investigators in the U.S. in addition to those at UCLA. FENA will also be located in WIN-GEM.

"It gives us great excitement and pleasure to learn that NIST is funding our new WIN-GEM building," said WIN-GEM's principal investigator, Kang L. Wang, the Raytheon Professor of Electrical Engineering, and director of both WIN and FENA. "We are thrilled to be a part of this construction plan, and the support will further strengthen our continued collaboration with NIST. WIN-GEM will allow UCLA to consolidate and upgrade several other centers' facilities and equipment

that are now spread out across multiple sites at the university."

The new building will house the most advanced metrology and characterization equipment and will help accelerate research on nanoelectronics and spintronics, as well as green energy programs like those being addressed by WIN-GEM's third center, the Energy Frontier Research Center on Molecularly Engineered Energy Materials, which is funded by the U.S. Department of Energy.

"This award is extremely timely, given the current state budget constraints," said Jane P. Chang, associate dean of research and physical resources at UCLA Engineering and co-principal investigator of the project. "State-of-the-art infrastructure is greatly needed to support the innovative and critical work of our faculty. Furthermore, the green engineering and manufacturing aspects of the project are in line with both the direction of the city of Los Angeles and state of California and promise a greater impact when construction is completed."

The NIST award was funded under the NIST Construction Grant Program. This project was chosen on the basis of scientific and technical merit, the need for federal funding, design quality and sustainability for the intended purpose, and the strength of the project-management plan. ●

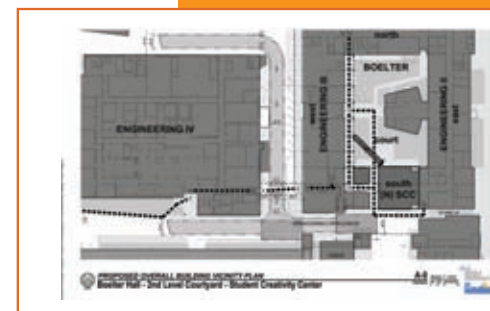
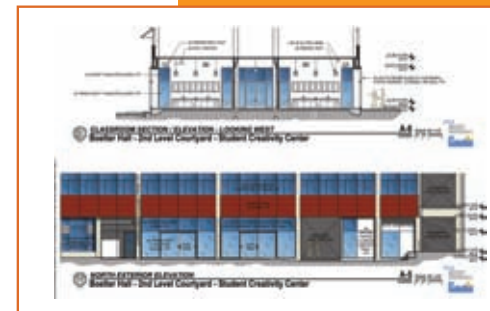
UCLA ENGINEERING PROPOSES CREATIVITY CENTER

To foster the creativity of future engineers, scientists and inventors, UCLA Engineering seeks to build a Creativity Center, a 5,000-square foot technology sandbox for UCLA engineering students, as well as aspiring high school students, teachers, advisors and parents.

"The Creativity Center will be a place for students to create, design, build, disassemble and re-engineer devices and gadgets of their own imagination," said UCLA Engineering Dean Vijay K. Dhir. "So much of engineering starts with a spark of an idea then carrying it out. Beyond the classroom and labs, we wanted to have a dedicated place where students can let their creativity and imagination run loose."

The center will be equipped with computers, open spaces, various tools, hardware, software, and equipment.

During the summer, a high school summer technology camp will be held at the center.



Throughout the academic year, the center will be home to several design-and-build student groups, such as the concrete canoe team; robotics; natcar and micromouse; rocket club and others.

It will also support other hands-on learning activities, and projects such as those sponsored by the Engineering Alumni Association.

The proposed center would be built inside part of the second floor courtyard of Boelter Hall. An effort to finance the center's construction from private donors is already underway. ●

To learn more about financing the center, contact Salvador Rivas at: srivas@support.ucla.edu

Architectural renderings of the layout and location of the center.