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CWRU engineering professor honored at White House

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For more information, contact Marci E. Hersh at 216-368-6518 or meh10@po.cwru.edu.

CLEVELAND—Chung-Chiun Liu, the Wallace R. Persons Professor of Sensor Technology and Control and Director of the Electronics Design Center at Case Western Reserve University, received the Presidential Award for Excellence in Science, Mathematics and Engineering Mentoring (PAESMEM) at a ceremony at the White House in Washington, D.C.

He is one of 10 outstanding individuals and six organizations nationwide to receive the prestigious award.

Liu received the PAESMEM award from the Office of Science and Technology Policy for his exceptional mentoring efforts that enhance the participation of young women—who are traditionally underrepresented—in science, mathematics and engineering. He has been successful mentoring teen-agers in high school in electrochemical engineering.

"Professor Liu has served as a mentor for a large number of individuals ranging from high school students to full professors at universities," said Robert Savinell, dean of the Case School of Engineering. "One special characteristic of Professor Liu is that he encourages students to develop their own thoughts and to test their own ideas. He is a role model for university faculty as an outstanding researcher, an engaging teacher and as a dedicated mentor."

Over the last five years, Liu has mentored seven female high school students from Hathaway Brown School in Shaker Heights in multiyear projects that, combined, add up to 16 years of mentoring.

Liu's program has produced a semifinalist and finalist (among the top 40 in the United States) at the Intel Science Talent Search and four regional semifinalists, three regional finalists (top 48 in the United States) and one national finalist (top six in the United States) at the Siemens Westinghouse Science and Technology Competition.

One of Liu's students has received a Lemelson/MIT Young Invention Apprentice Award, placing her among the top 16 students in the nation. In addition, Liu's projects



photo by Marci E. Hersh

Chung-Chiun Liu stands with Lynn Singer, deputy provost and vice president for academic programs, who nominated Liu for the national mentoring award.

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14 Adelbert Hall
10900 Euclid Avenue
Cleveland, OH
44106-7017
216-368-4440
or 800-368-CWRU

attained ISEL finalist status three years in a row at the Intel Science and Engineering Fair and of those, his students received two first place awards and others including full college scholarships and trips to science events in London and Germany.

For two consecutive years, two of Liu's students have been inducted into the National Young Inventors Hall of Fame in Akron, Ohio, for original research-only six projects are inducted each year. One of those students was featured in *Teen PEOPLE* magazine as one of the "20 Teens Who Will Change The World."

Students Liu has mentored also have consistently matriculated from high school to the top engineering undergraduate programs in the world. Their research has focused on fuel cells and microelectrochemical sensor projects. Many of those with sensor projects also have patents pending-with the student listed as the first inventor at Liu's insistence. He also has arranged for CWRU to turn over all licensing rights to these young inventors.

President George W. Bush's No Child Left Behind Act highlights the need to increase access to quality education for underrepresented and disadvantaged students. The Mentoring Awards identify individuals who have demonstrated a commitment to mentoring students and exciting America's youth about science, mathematics and engineering. The annual award, administered by the National Science Foundation, includes a \$10,000 grant and a presidential commemorative certificate.

In Washington, Liu met with leaders in federal sector education and research and attended workshops addressing effective mentoring of students from underrepresented groups. John H. Marburger, director of the Office of Science and Technology Policy, and Rita R. Colwell, director of the National Science Foundation, presented the award to Liu.

Liu received his bachelor's degree in chemical engineering from the Taiwanese University, a master's degree from the California Institute of Technology and a doctorate from CWRU. He joined the CWRU faculty in 1978 and is a fellow of the Electrochemical Society and the American Institute of Medical and Biological Engineers.

Internationally known for his cutting-edge sensor research, Liu researched and created sensors that are used to monitor various gases, including carbon monoxide in the atmosphere and blood sugar in diabetics, and for chemical process control. He pioneered the idea of using microfabrication technology, which is used to make integrated circuits for chemical and biological sensors.

In 1994, Liu received the Gold Medal at the International Meeting of Chemical Sensors for his contributions to chemical sensor technology. He holds more than five U.S. patents.

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