

UC SANTA BARBARA

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Endowed Chair Established for UCSB Director of the California NanoSystems Institute in Memory of Pioneering Inventor Peter J. Clarke

UC Santa Barbara has received a \$350,000 gift from Tegal Corporation, of Petaluma, to establish an endowed chair for the director of the California NanoSystems Institute (CNSI).

The professorship, which is pending approval by the UC Regents, will be named for the late scientific pioneer Peter J. Clarke, a longtime Santa Barbara resident and founder of Sputtered Films, Inc.

In 1967, Clarke invented the first commercially successful magnetron sputtering device in his basement laboratory.

Clarke's processing equipment proved to be revolutionary, allowing researchers and manufacturers to incorporate new and emerging materials in the thin films used in the fabrication of devices such as advanced semiconductors, microelectromechanical systems (MEMS), high brightness light emitting diodes, data storage, and nanotechnology inventions.

Incorporation of exotic materials in thin film deposition is essential to achieving higher device densities, lower power consumption, and novel functions exhibited by the newest generation of cell phones, computer memories, fiber optic switches, and remote sensors.

Today, the equipment is used worldwide.

Tegal is a leading designer and manufacturer of plasma etch and deposition systems used in the production of integrated circuits, MEMS, and nanotechnology devices.

The recent gift was made through Sputtered Films, which is now a subsidiary of Tegal.

Sputtered Films' success is based largely on Clarke's brilliant invention and its subsequent evolution.

Thomas Mika, chairman and president of Tegal, said the company's contribution to UCSB recognizes Clarke's pivotal role in advancing technology, his love of collaborative multidisciplinary scientific research, and his deep bond with the campus and long and fruitful collaboration with Evelyn Hu, scientific director of the CNSI and the first to hold the Clarke Chair.

"Tegal is establishing the Clarke Chair at UCSB for the director of the California NanoSystems Institute to honor the many contributions Peter Clarke made during his life," said Mika.

"We wanted to acknowledge his key role in developing leading edge technology in use today throughout the microfabrication and nanofabrication industries.

We are proud to be able to associate the name and legacy of Peter Clarke with the work of Dr. Hu and the University of California, Santa Barbara."

Mika added:

"Peter Clarke provided the initial support with his donations of equipment, ideas, enthusiasm, and his time and faith to create critical mass for microscale research at UCSB.

Tegal hopes our initial gift of \$350,000 will have a similar effect—adding the critical mass for the nanoscale research that will be performed under the guidance of the

Clarke Professor and Director of the California NanoSystems Institute."

The CNSI is a multidisciplinary research partnership between UCLA and UCSB established by the state legislature and California industry in 2000 as one of the first California Institutes for Science and Innovation.

By exploring the power and potential of manipulating structures molecule-by-molecule, the CNSI is on its way to creating revolutionary new materials, devices, and systems that will enhance virtually every aspect of our lives—helping to drive California's economy through innovations in medical delivery and health care, powerful new information technologies, energy efficient devices, environmental improvements, and more.

Hu, who is also a UCSB professor of electrical and computer engineering and materials, said she was honored to be appointed to the Clarke Chair and grateful to Tegal for its generosity.

"I consider it a tremendous honor to hold an endowed chair that honors Peter, the person he was, and the contributions he made, in particular to UCSB," said Hu.

"In a very real way, CNSI is here today because of Peter's faith in us.

He was always looking for ways to help UCSB—as well as ways for us to collaborate with Sputtered Films.

He truly wanted us to grow and succeed."

Endowed chairs are highly prized academic positions that enable a university to attract and retain distinguished scholars and to develop more fully a field of study by providing ongoing financial support for enhanced research and instruction.

Hu received her B.A. in physics from Barnard College and her M.A. and Ph.D. in physics from Columbia University.

From 1975-81, she worked at AT&T Bell Laboratories, developing microfabrication and nanofabrication techniques for high performance superconducting and semiconducting devices and circuits.

It was there that she met Clarke after a colleague purchased equipment from him when Sputtered Films was a very small company in Santa Barbara.

In 1984, Hu joined the faculty of UCSB as a professor of electrical and computer engineering.

"Peter had absolute confidence in our expertise and understanding of critical trends in device research and the accompanying nanofabrication that made that research possible," she said.

"Through the years, he always sought out opportunities to work with UCSB, to bounce ideas off us, to have us use his new equipment.

His interest in our programs, and his interest in working with us are key factors in our successful growth and development."

Peter Clarke's wife, Carole, a UCSB alumna, said:

"Peter considered Dr. Hu a friend as well as a colleague for many years.

I speak for all the Clarke family in giving our sincere thanks to UCSB, Dr. Hu, and Thomas Mika of Tegal for their cooperative effort in creating the Peter J. Clarke Chair.

We wish great success for all of you."

Hu's research focuses on the formation of nanophotonic devices that may provide more energy-efficient lighting sources and may also facilitate new, faster computation and communications.

She is a member of the National Academy of Engineering, the Academia Sinica of Taiwan, and the Institute for Electrical and Electronics Engineers (IEEE).

In addition, Hu is a fellow of the American Association for the Advancement of Science (AAAS), the American Physical Society, and the IEEE.

She is a recipient of a National Science Foundation Distinguished Teaching Fellow Award and a Lifetime Mentor Award from the AAAS.

In addition, she holds an honorary doctorate of engineering from the University of Glasgow.

About the Donor

Tegal Corporation provides process and equipment solutions to leading edge suppliers of advanced semiconductor, MEMS, and nanotechnology devices.

Incorporating unique, patented etch and deposition technologies, Tegal's system solutions are backed by over 35 years of advanced development and over 100 patents.

Some examples of devices enabled by Tegal technology are energy efficient memories found in portable computers, cell phones, PDAs and RFID applications; megapixel imaging chips used in digital and cell phone cameras; power amplifiers and RF filters for portable handsets and wireless networking gear; and MEMS devices like accelerometers for automotive airbags, microfluidic control devices for ink jet printers; and laboratory-on-a-chip medical test kits.

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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.