

UC engineers help launch a university in Armenia

THE UNIVERSITY of California is assisting in developing the American University of Armenia (AUA), a private university of technology and business located near the Armenian capital.

The idea for the new school arose following Armenia's tragic 1988 earthquake, which killed 25,000 and left half a million people homeless.

"This university will be the most important way to help Armenia's economy as it is trying to rebuild from the earthquake devastation, which was enormous," said **Armen Der Kiureghian**, professor of civil engineering at Berkeley and one of the proponents of the proposal to UC. He added that the university will be a regional institution offering advanced education to people throughout the Caucasus, the region between the Black and Caspian Seas.

The new university is funded by the Republic of Armenia and the Armenian General Benevolent Union, a philanthropic organization based in the U.S.

The idea for the new school was born when Berkeley's Der Kiureghian traveled to Armenia soon after the 1988 earthquake. He nurtured the idea's growth, with the help of several academic colleagues and fellow Armenian-Americans, including Berkeley engineering alumnus Mihran Agabian, chair of the civil engineering department at the University of Southern California, and Stepan Karamardian, former dean of the Graduate School of Management at UC Riverside.

William R. Frazer, UC senior vice president for academic affairs, headed a UC task force that traveled to Armenia in 1990 to study the proposal. The group was

impressed with the country's rich human and cultural resources. Primary and secondary education for Armenia's 3.5 million people today is "quite good," Der Kiureghian says, and the country has had a system of higher education since the fifth or sixth century.

In addition, Armenia has abundant natural resources including copper, zinc, aluminum, marble, and granite, all of which have contributed to the growth of mining and manufacturing. While Armenia does possess some computer and laser technology, it lags behind the western world in advanced manufacturing and trade.

The Regents approved UC involvement in July 1991, and Agabian was appointed as the first president of the new university. In addition, Der Kiureghian serves as dean of engineering (in residence in Armenia during the summers only), and Riverside's Karamardian is dean of business management.

The university opened its doors to its first students last fall at a temporary site in Yerevan, the Armenian capital. Permanent facilities will be completed nearby in three or four years.

Der Kiureghian says that the initial senior faculty will be primarily Americans, but the junior faculty will consist of 12 Armenian graduate students, currently enrolled in doctoral programs at Berkeley and USC in such areas as seismology, geology, environmental engineering, computer science, electrical engineering, business, and industrial engineering. The new administrators hope to attract professors from UC campuses to be visiting faculty in Armenia,

especially in the fields of earthquake engineering, industrial engineering, and business, the first emphases of the new curriculum.

With the support of American educators in setting curriculum and educational goals, the AUA is gathering the resources it needs to prepare "a cadre

of well-trained managers and engineers" to revitalize Armenia and strengthen the entire region, Der Kiureghian said. Undaunted by recent political developments there, Der Kiureghian added, "Volatile times like these are also times of opportunity to make lasting changes." ■

Intel fellowships honor Noyce

THE INTEL FOUNDATION has paid tribute to its co-founder, the late Robert Noyce, by establishing fellowship funds totaling some \$1.7 million in his honor at four U.S. universities, including Berkeley.

Berkeley is the only university to receive two of the Noyce fellowship endowments.

Most of the fellowships go to students with technical backgrounds who are involved in research aimed at improving U.S. industrial competitiveness. At Berkeley, one Noyce Fellowship will be awarded annually to a student in the Management of Technology Program, an interdisciplinary program of the College of Engineering and Haas School of Business Administration.

The second fellowship at Berkeley will support an engineering graduate student in microelectronics. Funds for the second fellowship are from a grant through Intel from the Noyce Foundation.

"Bob Noyce is regarded as the father of the integrated circuit — among engineering students his name gives special prestige and significance to these new fellowships," said David A. Hodges, Dean of engineering at Berkeley.

Noyce, co-inventor of the

microchip, died in 1990. He co-founded both Intel and Fairchild Semiconductor Corporations and was chief executive officer of SEMATECH, the semiconductor manufacturing research consortium. Noyce also served as a Regent of the University of California.

Intel chairman Gordon E. Moore came to the Berkeley campus to present the first Noyce Fellowship to Amy A. Shuen, a doctoral student in business and public policy. Shuen is researching technology strategy, global competitiveness in the semiconductor industry, and multinational alliances. She received an M.B.A. from Harvard and a B.S. in engineering and English from Yale. Before coming to Cal, she worked in industry for 10 years (including jobs at Bell Laboratories, Proctor & Gamble, and Intel).

"The fellowship is a great honor and inspiration," she said. "It has special meaning for me because Bob Noyce created the industry in which I have worked and am doing my research. He's a role model for entrepreneurs, engineers, and managers throughout Silicon Valley."

Noyce Fellowships were also created at the University of Texas at Austin, MIT, and Grinnell College in Iowa, Noyce's alma mater. ■



New use of Bay Model boosts Cal's environmental research

A UNIQUE COOPERATION in engineering between the University of California and the U.S. Army Corps of Engineers was inaugurated in early April at the Bay Model Hydraulics Laboratory in Marin County.

The event celebrated a contract signed by the Corps' San Francisco District and Berkeley's College of Engineering, allowing University engineers to conduct research using the unusual model, located in Sausalito, CA, just north of the Golden Gate Bridge.

Under the new contract, the University will provide technical staff who will work on research projects with engineering professors and graduate students. The goal of the agreement is to increase use of the unique model in conducting studies of water-related environmental problems in the San Francisco Bay Area.

"This is the largest active hydraulic model in the United States," noted Cal civil engineering professor Hsieh W. Shen, who spearheaded the new agreement. "I hope the contract will

Celebrating the new agreement — on the shore of the bay, just outside the Bay Model visitors' center — are (from left) San Francisco district engineer Colonel Stanley G. Phernambucq and South Pacific division engineer General Roger F. Yankoupe, both of the U.S. Army Corps of Engineers; CE professor Hsieh W. Shen; and C. D. Mote, Jr., Berkeley's Vice Chancellor—University Relations.

serve as a focal point for our University to participate in solving in environmental problems in the bay region."

The initial contract is for 1992, with the option to renew for two more years.

Berkeley engineers have begun to study the model's set-up and capabilities to determine how it can be used to advance research. UC engineers have conducted a wide range of research on the bay; among many projects, they have looked at such diverse issues as the migration of fish, seaweed, and trace metals through the bay's waters.

"After we study the model to see how we can best use it, I believe we will find

Audubon and engineers honor Shen for environmental work

TWO VENERABLE NATIONAL organizations — one for environmental preservation and the other for engineering — joined in April to honor civil engineering professor Hsieh Wen Shen for his technological contributions to restoring the environment.

Shen was awarded the Joan Hodges Queneau Palladium Medal by the National Audubon Society and the American Association of Engineering Societies (AAES). The award recognizes and encourages cooperation between engineering professionals and environmentalists to find innovative solutions to environmental problems.

The award stems from Shen's work to help restore southern Florida's Kissimmee River to its natural state after the Army Corps

of Engineers channeled the waterway to control flooding (see cover story, *Forefront*, 1990). The \$33 million flood control project turned the once shallow, meandering 98-mile river into a 52-mile-long canal. This channelization of the Kissimmee destroyed more than 40,000 acres of wetlands and displaced 90 percent of the wading birds and ducks that foraged in the marshes.

Shen, an international expert in river dynamics, constructed a 60-by-100-foot model to test computer simulations of several options considered for the river renovation.

The award is named for Joan Hodges Queneau, a noted conservationist, and was established by her husband, engineer Paul Queneau. ■

a test bed that is more useful than the analytical models we have," said Keith Crandall, chair of Berkeley's Department of Civil Engineering and one of several UC officials attending the ceremony. "With the model, we can see how the whole system works."

Efforts are under way to develop cooperative research projects with a variety of agencies to use the model. Representatives from the U. S. Geological Survey, the Port of San Francisco, the Contra Costa Water District, Stanford University, and UC Davis were among those who spoke at the ceremony to welcome the new cooperation.

The model, occupying about one acre, reproduces water levels, flow patterns,

and salinity distributions in the Bay Area and the Sacramento-San Joaquin Delta estuarine system.

The original model was constructed in 1956, representing the bay and 17 miles of the contiguous Pacific. The delta was added in 1966-69. A computerized data acquisition system was installed in 1983, and computers now control tides, check other model controls and boundary conditions, and help analyze test results. In addition, test parameters can now be monitored in real time, either at the model or through links from other locations.

The Corps of Engineers maintains a visitors' center at the site; some 100,000 visitors tour the Bay Model each year. ■