Nobel Laureate Speaks at E&CS Spring Commencement

Speaking on “Science Savvy for Serenity and Survival,” Dr. Leon M. Lederman, recipient of the 1988 Nobel Prize in Physics, urged new E&CS graduates to “decide not to stop your education” and to “manage your career so that you are somehow in contact with schools.”

In his May 25 commencement address — memorable for both wit and wisdom — Lederman deplored the abysmal ignorance of science revealed in an NSF-sponsored survey of adult Americans (“only 9% knew what a molecule is!”) when there are so many “looming decisions and looming problems that must be solved by consensus, and some are global,” such as uncontrolled population growth, the vanishing ozone layer, toxic pollution buildup, deforestation, and the disappearance of species.

Relating science to technology, he observed that “technology itself comes from science, but science itself depends on technology. They are a nonlinear, escalating series of interactions and steps, as science begets more technology and technology empowers science, begetting more technology.” While this relationship has certainly “added to human capabilities and fulfillment,” he finds it also the root cause of many of the planet’s problems. He called for a “desperately needed balance between environmental doom-mongering and technological optimism.”

(In a humorous aside, Lederman quipped, “An engineer can build ten good bridges, but if the eleventh falls down, he usually goes to jail. A physicist can do ten absolutely worthless experiments, but if the eleventh works, he gets a Nobel Prize. That’s life.”)

Lederman condemned the tendency to base important economic decisions on short-term outcomes while the nation suffers from inadequate long-term investment in education, research and infrastructure. He warned that in our obsession with deficit reduction, Americans are ignoring a crisis in education and writing off our cities, abandoning them to a permanent underclass. E&CS graduates will find their knowledge “useful in your personal life; in making community decisions such as where to place utility wires and reactors and how good education is; and [in understanding] national issues such as whether to spend money on electric car research — all kinds of decisions.” On the “joint problem” of education in grades “K-100,” he urged graduates to “think about engaging in this fight because you come from a base of understanding about technology. Solve how technology and education can work together to impact society.” Freed from the “cloud of the Cold War,” literate citizens “can devote your collective powers and energies to the real enemies of greed and indifference.”

“But first, attend the party tonight — and then go to work,” he concluded, showing he clearly understood the priorities of his Arco Arena audience.

Industry/CSUS Team for GRAD_2000 Scholarships

A very brainy group of local high school seniors received major scholarship awards from Intel and Hewlett-Packard executives on March 26 in the CSUS Playwright’s Theatre. The 23 new freshmen, who will enter the CSUS School of Engineering and Computer Science this fall, comprise the first GRAD_2000 cohort.

The GRAD_2000 program will provide renewable scholarships of $2600/year for fees and books — enough to encourage recipients to devote full time to their studies. Along with the scholarships, industry sponsors will provide summer jobs and co-op positions, boosting the total worth of each award to about $35,000.

The GRAD_2000 program was developed in part to counter the growing trend of delayed university graduation brought about by increased fees and the state’s economic recession. With over 60 percent of E&CS students working 20-30 hours per week to meet expenses — or even dropping out for a semester or longer to work full time — six or more years spent pursuing their bachelor’s degree is all too common. Besides the hardships suffered by students trying to balance work, study and other obligations, prolonged enrollment also deprives local employers of a steady stream of technical professionals.

See GRAD_2000, page 7

See Nobel, page 8
A Message from the Dean

Another year has passed and it is fall again. We look forward to a better academic year during 1996-97 and expect that enrollment will increase in practically all programs.

The last academic year was an exciting one. Many events took place for which the students, faculty, staff, and alumni of the School are, and should be, proud. The School's Open House, held during Engineers Week, attracted more than 800 area high school students to the campus. Intel Corporation and Hewlett-Packard Company jointly funded 23 merit scholarships for incoming freshmen in fall 1996. The four-year scholarships provide tuition and fees, cost of books, summer jobs, and an internship under a program called GRAD_2000. The students receiving these scholarships will major in computer engineering, computer science, or electrical and electronic engineering. We expect to develop many more scholarships of this type in the coming years. For the second consecutive year, the ASCE student chapter won the Mid-Pacific Concrete Canoe championship, thereby earning the right to compete in the national races held in Madison, Wisconsin, where they placed sixth overall. Our mechanical engineering and mechanical engineering technology students scored big at the latest Formula SAE competition in Pontiac, Michigan, finishing tenth out of 97 schools entered. Dr. Leon Lederman, the 1988 Physics Nobel Prize winner, was the speaker for the School's May 1996 Commencement. These and many other events have given all of us a sense of pride that we hope will continue in the coming years.

We who work here in the School are determined to do all of the above and still provide high-quality classroom education and state-of-the-art laboratory experiences for all of our students. In an age of revenue cuts and greater demands on faculty and staff accountability — with more expected for less — we are ready to face the challenge in the coming years. In doing so, however, more and more industry-education partnerships will be required. This is a national phenomenon — true for Sac State and all other public and private institutions of higher education. To that end, we look forward to your support, cooperation, and good will towards the School and to the University as a whole. Please keep in touch.

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E&C and Community Colleges Articulate Agreements

Representatives of ten community colleges celebrated CSUS River City Days with E&C faculty and staff by exploring ways to ease the transfer process and promote timely university graduation. The April 26 meeting, organized by E&C Associate Dean James Kho, was the first such conference in 10 years.

"While course-by-course transfer credit agreements that are already in place were reviewed and updated, a major thrust of the conference was to explore the feasibility of program articulation. This new approach examines the entire pre-engineering and pre-computer science programs offered at these institutions, to determine whether it is possible for transfer students to have completed their associate degree requirements and enter CSUS with junior status," Kho said.

With 55 to 60 percent of E&C students entering as transfer students, such dialogue is critically important. Well-articulated programs that will ensure that transfer students are as academically well prepared as those entering CSUS as freshmen will avoid delayed graduation resulting from having to take additional background courses. A mutual understanding of course offerings and content, and identification and elimination of content gaps and other barriers — along with appropriate academic advisement — will smooth the transition for the many transfer students who annually arrive at E&C.

Besides neighboring American River, Cosumnes River and Sacramento City colleges, other community colleges represented were Diablo Valley, Modesto, Napa Valley, City College of San Francisco, San Joaquin Delta, College of San Mateo and...
A Rendezvous with NASA Astronaut Janice Voss

Dr. Janice Voss, NASA astronaut, landed at CSUS last March 15 and shared some experiences that brought her all the way from Minnechaug Regional High School in Wilbraham, MA to a rendezvous with the Russian Mir space station.

Aided by slides and a videotape, Voss described the rigors of astronaut training and some highlights of her two Space Shuttle flights — first to 250 elementary, middle and high school students from four local MESA (Mathematics, Engineering, Science Achievement) clubs, and later to a diverse public lecture audience spanning all ages. Before lift-off from campus, she was the featured guest at a fund-raiser for E&CS Women’s Programs.

A veteran of 438 hours in space, Voss’ distinguished academic record includes a B.S. in Engineering Science from Purdue University, and an M.S. in Electrical Engineering and a Ph.D. in Aeronautics/Astronautics from MIT. She spent two years as a co-op student at the Johnson Space Center (1973-1975), performing computer simulations, and another year there (1977) as a crew trainer, teaching entry guidance and navigation. After completing the Ph.D. in 1987, Voss joined Orbital Sciences Corp., responsible for mission integration and flight operations support for the Transfer Orbit Stage (TOS) that later launched the Advanced Communications Technology Satellite from the European Retrieve Carrier (EURECA) with a robotic arm, did a spacewalk, and conducted experiments in the new Spacehab middeck augmentation module. Highlighting the second (STS-63), February 2-11, 1995, were the Mir rendezvous, deploying and retrieving Spartan 204, and the Spacehab’s third flight. Her next mission is set for March 27, 1997.

Vegetarian Voss revealed during a luncheon interview that she decided to become an astronaut in the 6th grade. An avid science fiction fan who excelled at math and science subjects, she received unwavering support from her parents and teachers: “Nobody tried to discourage me,” she insisted. Her unhesitating answer to a question about retirement: “I will fly until I die.” Early members of the astronaut corps are still qualified even in their late 50s and early 60s, she noted.

Views of the earth shown during the public lecture depicted environmental changes wrought by humans; however, astronauts make observations — not judgments — about the environment, she said. Other slides illustrated

Dr. Voss flanked by E&CS Women’s Programs coordinators Sally Leake (left) and JoAnn Mahaney at the second annual Industry Mentor Dessert Tasting Social and fundraiser, honoring professional women who are mentors to E&CS students and celebrating Women’s History Month. Students, faculty, staff and industry guests visited with Voss and sampled delicious desserts donated by a dozen bakeries and individual chefs. Corporations, organizations and individuals were recognized for event sponsorships totaling nearly $2500.
In-kind Gifts Instrumental in E&CS Program Quality

Engineering and computer science instruction are particularly equipment-dependent. Employers and graduate schools alike expect students to have had experience on current equipment.

Yet funds for equipment have dwindled along with the state budget for higher education. In 1995-96, E&CS received only $82,000 for new equipment and none for replacement equipment. “With funding at that level — about 1 percent of the School’s budget — it would take about 100 years to completely replace existing equipment. But then everything will be obsolete,” Dean Das explained.

In grappling with these conflicting realities, the School has increasingly turned to the private sector, while cognizant that companies are also currently stressed by shifting national priorities, mergers and internal restructurings. Some very significant in-kind gifts eased the crunch in 1995-96 and were instrumental in advancing particular programs.

Two such contributions, to Dr. Cynthia Desmond (EEE), will help develop teaching and research in microfabrication: ten licenses of Virtual Wafer Fabrication Package software, each valued at $200,000, from Silvaco International of Santa Clara; and an entire Class 100 clean room, from local Aurora Electronics. A $10,000 cash grant from Intel to Desmond will spur development of related coursework.

Hewlett-Packard’s gift of 12 powerful new networked workstations, allied hardware, and extensive software and faculty training — collectively worth $301,480 and placed in a new Mechanical Engineering Advanced Computing Lab — permitted a major curricular change in upper division design instruction. Using the latest engineering software packages, students can now design and test products rapidly, without the time and expense of prototype fabrication; they can also access relevant information on the Internet. The gift was awarded under HP’s highly competitive University Equipment Grants Program.

The Computer Engineering Program (CpE), coordinated by Dr. Ronald Becker, has also benefited from this HP grant program: Building upon last year’s award of logic analyzers, Becker recently secured 13 X-terminals and 10 workstations plus software, valued at $197,023. Extending the HP partnership, nearby Roseville Networks Division is working closely with Becker to ensure that CpE students are as well educated as possible in very high-level logic design. The division has provided several advanced servers to the program, facilitated the acquisition of software site licenses, and contributed the services of alumnus Brian Dowling (BS/ECE ‘84) to consult in teaching the Verilog ASIC Design and Verilog ASIC Project courses.

Several smaller HP equipment gifts are assisting student services programs such as MESA and the Women’s Programs Office to function. As an example, the MESA Engineering Program upgraded and networked its student computer laboratory with four donated Vectra PCs and software. In-kind gifts from others have helped students working on projects such as the Formula SAE car and the concrete canoe to compete successfully against peers from America’s foremost engineering schools.

Loral Western Development Company, located in San Jose, augmented previous years’ gifts to the EEE Department with massive quantities of electrical and electronic components, ranging from tiny resistors to a large rework station for surface mounted devices which, according to E&CS head technician Bruce Scott, “gives us a capability beyond what we have ever had for component-level repair on circuit boards.” These recent gifts have totaled $147,844.

Sacramento newcomer Packard Bell donated 73 pallets of used products worth $49,782 from its Sacramento Army Depot site which are now being used throughout E&CS, in classrooms, laboratories and offices. Particularly useful were 68 Everex 386 computers with related hardware, permitting upgrades from venerable 286s. The shipment included assorted other

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Test Advances Safer Highway Maintenance

Driverless robot “shadow” vehicle follows Caltrans highway maintenance truck during successful feasibility demonstration on July 15 at the CHP training track in West Sacramento. A $423,000 grant from Caltrans and the Federal Highway Administration is funding the development of a driverless vehicle to protect maintenance workers from careless drivers. The experimental vehicle can travel at speeds up to 30 mph while following the lead vehicle at distances of 40-170 feet. Its relationship to the lead vehicle is guided by Pentium-processed data from three independent systems: GPS, microwave antenna, and vision technology using a camera. EEE Prof. Mahlon Heller heads a research team which currently includes EEE Prof. Jean-Pierre Bayard, the UC Davis Advanced Highway Maintenance Construction Technology (AHMCT) Center, and E&CS grad students Bob Schenck, Eric Freedle, Marvin Walters, Sanjay Soni and Girish Kulkarni. The next step will be a shadow vehicle prototype, in partnership with the private sector, which should generate international interest.
CSUS — A Standout at 1996 Formula SAE Competition

CSUS mechanical engineering and mechanical engineering technology students scored big at the 1996 Formula SAE competition in Pontiac, Michigan, finishing tenth out of 97 entries.

The event is a student design competition sponsored by the Society of Automotive Engineers. It is one of the largest and most demanding student design competitions in the world. Schools from the U.S., Mexico, and Canada design and construct race cars that look like miniature Indy cars.

Although CSUS had entered the grueling four-day event only once before, the car and team performed flawlessly, beating out such prestigious rivals as Cal Poly SLO, Purdue, U.S. Naval Academy, University of Michigan, Rensselaer, and GMI.

From the time they rolled their race car off its trailer until the event was over, the Sac State team never missed a beat. Aside from checking nuts and bolts and adjusting tire pressure, no repairs were required. That experience was truly different from the major engine and chassis failures many teams experienced. Of the 97 entries, only 14 finished both heats of the endurance race. During the contest team leader Eric Blackburn said, “There must be something the team should be doing, but the car works so well there isn’t anything to do except drive.”

Sac State was one of the smaller teams. Nine students, their faculty advisor, and eight parents made up an enthusiasm what they lacked in numbers. When they first pulled in with a small open trailer and a rented motor home, they didn’t make much of an impression. Most top schools have large teams dressed in matching outfits; their elaborate trailers, complete with workshops, are decorated with school colors. But by the time the event was over, everyone knew who Sac State was.

The race cars are intended to be prototypes of a production car for weekend racers. The design goal is 1000 units per year with a maximum price of $8500. Over the course of four days the teams are judged on design, a detailed cost analysis and report, a formal presentation, and safety. Actual performance is determined by a series of events that begins with a full safety inspection and a brake and noise test. Acceleration is evaluated in a drag race, and handling is checked by a skid pad and autocross course. The final and most important event is the endurance race.

Awards were presented at a banquet attended by over 1000 guests. Presenters included the president of SAE, the president of GM’s North American operations, and vice presidents of engineering from Chrysler and Ford. Also represented were top executives from Dupont, Goodyear, Delco, Altair Engineering, EDS, Transportation Research Center, McKenna Industries, Flowmaster Exhaust Technology, and Argonne National Laboratory.

Terry Earwood, a well-known racer and chief driving instructor of the Skip Barber Advanced Racing School, was master of ceremonies. In his closing remarks he made special mention of three schools: first place finisher University of Texas at Arlington, second place Rochester Institute of Technology — and CSUS.

Briefly . . .

Graduating seniors from the Computer Science and EEE departments captured five of the twenty 1995-96 Senior Achievement Awards, given for outstanding academic performance and campus service during their undergraduate years: Diana Fowler (CSC), Laura Haughney (EEE), Robert Schenck (EEE), Rami Tarazi (EEE) and Janet Tobia (CSC) were honored at the annual President’s Concert on May 19. • The California office of Associated General Contractors of America gave the CM Program $6,050 to establish a scholarship endowment fund in honor of Ralph “Bud” Rodgers, former manager of AGC’s Delta-Sierra district. • The CSUS student chapter of the Structural Engineers Association of Central California (SEAOC) won first prize ($400) in a regional bridge design competition sponsored by the parent organization at CSU Chico on May 11; the aluminum structure supported an 18,900-pound load over its 15-foot span. Chico and UC Davis placed second and third, respectively. • Matthew Kerby, BME graduate student, won first place in See Briefly, page 8
CSUS Concrete Canoe Team Goes to Nationals

A victory at the Mid-Pacific Regional Competition at Stanford University on April 28 earned the CSUS concrete canoe team a chance to compete against other regional winners at the ninth annual national contest organized by the American Society of Civil Engineers (ASCE).

The event is the most significant collegiate competition offered to civil engineering students, drawing teams from top universities throughout the U.S. and Canada. The CSUS Konkrete Kahuna team placed second last year at the nationals in Washington, D.C., after a stunning upset of perennial regional winner UC Berkeley.

The CSUS Concrete DeVille team again trounced Cal at the 1996 regionals, but finished sixth overall at this year’s national event, held at the University of Wisconsin, Madison on June 13-16. The University of Alabama-Huntsville, Michigan State and UC Berkeley took the top three spots, respectively, among the 26 competitors.

“The competition was way more intense than last year,” commented Jessica Jones, project manager. “We were the only ‘commuter school.’ Other teams had as many as 30 students who received three units of academic credit, whereas we had a solid core of seven out of 18 team members, all volunteers.”

Entrants are judged on several criteria: design paper, oral presentation, display board and the design, construction and materials of the finished canoe, in addition to several canoe races. CSUS paddlers made a big splash in four of the canoe events, held on Lake Mendota: third in the co-ed sprint, fourth in the women’s distance, fifth in the women’s sprint, and sixth in the men’s distance. While Jones was disappointed in the results of the academic portions, she noted that no other region had garnered such high overall rankings as our Mid-Pacific Region, winning both third and sixth places.

The CSUS Team designed and constructed a 20-foot-long, 97-pound craft of a lightweight mix of cement and aggregate with a unit weight of 65 pounds per cubic foot and 28-day compressive strength of 2600 pounds per square inch. The concrete hull covers a frame and ribs of 1/4-inch copper tubing for tensile strength.

Master Builders, Inc. of Cleveland, Ohio, which develops, manufactures and markets concrete chemicals, sponsored the national contest with ASCE. But the team had to conduct a vigorous campaign to raise nearly $15,000 to meet the expenses of participation. Several Sacramento-area companies responded with valuable in-kind support, cash, and/or advice to the team, for both the regional and national events: Teichert Aggregates and Readymix divisions, U-Haul, Hertz Penske, US Rents, Buehler & Buehler, Hoffman Construction, Hui-O’Hawaii Outrigger Club, and McKenny-Krug. Hubacher Cadillac donated a Cadillac logo to adorn the craft. Organizations, too, provided major funding: CSUS Associated Students Inc., American Concrete Institute, ASCE Sacramento Section and Younger Members Forum, and Aggregate Producers of Northern California. E&CS faculty and staff contributed the remaining cash that the team needed for transportation of craft and team, lodging, and other expenses.

Jones is looking forward to next year’s effort, along with five other returning teammates who will provide much-needed continuity for the next team. According to Jones, the Concrete DeVille team was very thorough in its documentation, which will be advantageous. In addition, Elizabeth Sparkman, civil engineering graduate student and two-year canoe veteran, will be serving on the national rules committee with representatives of the other top university contenders.

Community Colleges
Continued from page 2

Solano. Santa Rosa Junior and Yuba colleges were unable to send representatives, but forwarded materials and expressed a desire to participate in follow-up activities. Most E&CS transfer students come from these institutions, specifically from the majors represented at the conference: engineering, computer science, design/engineering technology, math, science, and architecture/construction.

By the end of the all-day conference, attendees agreed to furnish a list of issues and problem areas that need attention to Kho, who will compile and direct them to E&CS chairs and program coordinators for attention. Dr. Kho expressed satisfaction with the conference: “We received overwhelmingly positive feedback and requests for similar meetings in the near future.”
ENGINEERS SHARE QUALITY INFO AT SYMPOSIUM

SMUD hosted the Power Quality Symposium-96 on April 4-5 at its new customer service building. Dr. John Balachandra of the CSUS Electrical and Electronic Engineering Department organized the event, which drew about 50 attendees.

David Blottie, vice president of Science Applications International Corporation and district manager of its Integrated Energy Technology Division, delivered the keynote address. John Mungenast, copublisher of Power Quality magazine, was among the many other notable symposium speakers. Over 20 power quality-related articles were presented by their authors, all engineers working in the field.

Westinghouse Electric, Pacific Gas & Electric Co., SMUD, Darnell Group, Reliable Power Meters, Sandia National Laboratory, Superconductivity, Inc., and Cyberex, Inc. were among the companies represented by presenters. Although the majority of the speakers were from the West Coast, one made the trip from New York and another came from North Carolina.

E&CS hosted the first Power Quality Symposium, held October 18-19, 1994. It is at just such events that information about technological advances is delivered to engineers in the field, and many attendees expressed satisfaction with both of the symposia and with the quality of the information presented.

GRAD_2000
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"Freshmen who enter in fall 1996, who follow a prescribed curriculum and who don't have to work part time at low-wage, nontechnical jobs, will graduate in the year 2000" under the new program, E&CS Dean Braja Das said.

The program’s other goal is to attract more highly-qualified freshmen to E&CS. The seniors, all from Sacramento-area schools, were selected for GRAD_2000 based solely on merit. Qualifications included a GPA of at least 3.5 and completion of precalculus, chemistry and a computer programming language. The scholarships are renewable for recipients who maintain a 3.5 GPA each semester in the rigorous computer science, computer engineering or electrical/electronic engineering majors at CSUS.

Computer Engineering Prof. Ronald Becker scoured local high schools for prospective applicants, personally contacting students, parents, teachers and counselors. Becker eagerly tackled the project, which also advances his personal goal of “having the public recognize what industry has long known—that our School is an equal of Cal Poly San Luis Obispo. It takes a nucleus of excellent students to get that started,” he said.

Becker plans to have about 20 new students starting GRAD_2000 each year. The minimum qualifications for the second cohort include a GPA of 3.7, a total SAT score of 1100 (at least 500 on the math section), completion of precalculus, and any programming experience (e.g., in PASCAL or BASIC). “Regrettably, too many high schools don’t offer programming, and awardees will need a summer class before entry to prepare themselves,” he said.

Becker enlisted two major employers of CSUS engineering and computer science graduates, Intel Corporation and Hewlett-Packard Company, to initiate GRAD_2000. Das is confident that other employers will follow Intel and Hewlett-Packard in this effort. “We will then offer the best computer-related undergraduate education in California, while doubling our output of graduates,” Das said. With the national demand for computer engineers and computer scientists growing at over 6% per year—mirrored in regional high-tech growth—there will be a ready market for CSUS graduates in these fields.

This year’s GRAD_2000 recipients come from Luther Burbank, Casa Roble Fundamental, Christian Brothers, Del Campo, El Camino Fundamental, Encina, Florin, Galt, Jesuit, Hiram Johnson West Campus, Kennedy, Mesa Verde, North Tahoe, Oakmont, Placer, Valley, and Vanden high schools.

Becker invites inquiries from high school students, parents and high school counselors. They can telephone him at 916/278-6844 or send e-mail to Dr_Ron@csus.edu. The E&CS Web site at http://www.ecs.csus.edu/ has other important information.

GRAD_2000 students sport new caps imprinted with the program’s name and Intel’s logo, following the March 26 award ceremony attended by families, friends, company executives and members of the CSUS community.
Briefly
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the engineering and computer science category (graduate division) at the CSU Systemwide Student Research Competition, May 3-4. • Nadarajah Navaruparajah, CSC graduate student, won the Best Paper Award at the CSUS Student Research Paper Competition on March 9 for "A Methodology for Visualization of Concurrent Programs"; the results of his master's research with Dr. Carole McNamee, the paper describes a layered approach to the development of visualization systems and an implementation of this approach for the SR concurrent programming language. • The Governor's Office of Child Development and Education has awarded a renewable $75,000 grant to MESA and E&CS Women's Programs staff Jim Harold, Sally Leake and JoAnn Mahaney; the three-year Academic Volunteer and Mentor Service program will promote academic achievement among at-risk kids at four high schools and feeder middle schools, in partnership with Sacramento City Unified School District and local industry. • A new version of PC^2, funded by a Microsoft Corp. grant to Dr. John Clevenger (CSC), was used to run the ACM International Collegiate Programming Contest Finals in Philadelphia, PA, last March; the new system was implemented by CSC seniors Samir Ashoo and Rob McPeak, and 1990 alumnus Doug Lane (student Troy Boudreau provided testing support). • Friends in the Younger Members Forum of the ASCE Sacramento Chapter have established a memorial scholarship endowment in honor of David Higgins (BScE '89), who died of leukemia in 1993, to provide annual scholarships to qualified students with environmental or water resource engineering career goals.
• The GenCorp Foundation has initiated a GenCorp/Aerojet renewable scholarship program with a $5,000 initial gift, and awarded another $5,000 for equipment needed for ME senior project implementation. • Intel Foundation funded a three-day professional development retreat for 40 MEP Project Success students at Granlibakken (Lake Tahoe), led by PS Director Jaime White; another grant from the GenCorp Foundation funded training materials. Intel Foundation also awarded $7,500 for the MEP scholarship program. • NEC Electronics in Roseville granted $21,000 to the MEP for program support; other NEC gifts have assisted MESA, BEST and the Women’s Programs.

Nobel
Continued from page 1

Lederman's advice is firmly grounded in his own dedication to lifelong teaching and learning. He is credited with setting the paradigm for modern nuclear physics and particle physics research through four decades of innovative experimentation, and has garnered a formidable array of prestigious prizes, awards and fellowships. He holds honorary degrees from 23 universities around the world. But he has rejected ivory tower confinement, preferring to initiate programs that advance effective science teaching and learning at the elementary, secondary and university levels. Characteristically, the 73-year-old Lederman has been teaching introductory physics since 1992 as Pritzker Professor of Physics at the Illinois Institute of Technology. Born in New York City, Lederman received his B.S. from CCNY in 1943 and his A.M. from Columbia University in 1948 after service as a first lieutenant in the Signal Corps (1943-46). After receiving the Ph.D. in Physics from Columbia University in 1951, he taught there for the next 28 years, and also directed the Nevis Laboratory from 1961 to 1978. In addition, the tireless Lederman conducted research at Brookhaven National Labs (Long Island, NY), CERN (Geneva, Switzerland), Princeton, Lawrence Berkeley Lab, Rutherford Lab (England) and the Fermi National Accelerator Lab (Batavia, IL). He directed the Fermilab from 1979-89; after "retiring" (he remains active as director emeritus), he became Sulzberger Professor of Physics at the University of Chicago until 1992, when he began a one-year term as board chairman of the American Association for the Advancement of Science.

In 1956, Lederman and his Columbia colleagues discovered the long-lived neutral kaon (formerly called "K-meson") particle, and in 1961 the muon neutrino — the first proof that there was more than one type of neutrino — for which he won the Nobel Prize. In 1977, his team discovered evidence for a new elementary particle called the "bottom quark." He has published about 200 papers on various aspects of high energy particle physics including the discovery of the kaon and two neutrinos, parity violation in pion and muon decay, high transverse momentum pions, and upsilon resonance and the B-quark (Wolf Prize, 1983).

During a stint as Science Advisor to the Governor of Illinois (1989-93), Lederman worked with Dean Das, who was then teaching at Southern Illinois University-Carbondale.

MEP students Jamaal Whitmore (EEE) (center) and Roberto Ramirez (CE) (right), shown with American Public Works Association scholarship chairman Ed Santarosa of CH2M Hill, were among E&CS students who were successful in local, regional and/or national scholarship competitions sponsored by professional societies, corporations, foundations and individuals in 1995-96.
Construction Management Grads Change Campus Skyline

Just west of the Science Building, new Placer Hall is rising where squirrels once begged crumbs from students lounging on the grass. And CSUS Construction Management alumni Rich Miller, project manager, and Adam Villacara, project engineer, are back on campus — this time as professionals. Both work for Allen Bender, Inc., the project’s general contractor.

The building is a joint venture between CSUS and the California District Office of the U.S. Geological Survey’s Water Resources Division. It will house shared facilities and collaborative teaching and research opportunities for students, faculty and USGS staff. The job has a mid-November completion date.

Miller and Villacara admitted to initial mixed feelings about returning to CSUS: Miller, a 1993 graduate, said that while he enjoyed being back “without some assignment weighing on my mind,” he has another reason to worry: “This a very tightly-scheduled project and if we don’t make it, my name will be mud.” Villacara, who graduated only last December, had been anxious to leave CSUS after spending five intense years here. Smiling broadly, both agreed that they enjoy the free parking passes; moreover, “When we were in school, we never got to park this close,” Villacara said.

Like many CM graduates, both men were well grounded in practical construction experience before tackling the CM curriculum. After earning a B.S. in Environmental Studies from Sac State, Miller had worked in residential remodeling and construction for his uncle; but without previous commercial experience, he could only get employment as a laborer on the big sites. After breaking his toe on a job, he took the advice of a friend and CM alumnus who recommended that he apply to the program. He then took another four years of study, lacking the background in math, physics and other courses expected of CM students. Miller began working part time at Bender even before he finished his degree. He also married and now has a three-year-old son, with another child expected.

Villacara had worked in the Bay area as a laborer and carpenter for about three years, then went to Diablo Valley Community College to study business administration. Since he “always liked construction,” and found business “not my cup of tea,” Villacara came to CSUS to study construction management. A stellar student, he received scholarships from the Sacramento Builders’ Exchange and the Specialized Carriers & Rigging Foundation.

While both men expressed great satisfaction with the preparation gained in the CM program, they were amazed by the multifaceted nature of the industry. Rather than specific courses and information, they particularly value the skills learned in the program, such as estimating, quantity takeoffs, planning, scheduling, negotiating and management, and also their engineering background. “Although we do little engineering, we understand it,” Miller said. “Our job is really coordinating and ensuring that subcontractors are doing what they’ve said and that we are doing what the company contracted for.”

They have found graduates from other programs (“without naming names”) generally less prepared, especially those who come from areas with little construction activity. At Bender, Miller said, “Sac State alumni have the offices with the windows.”

Mouse Gets Crown

Superior cars, bridges, concrete canoes — E&CS students are definitely capable of building the better mousetrap. Now they’ve also built the better (micro)mouse. A micromouse is a robotic device programmed to quickly map and negotiate a maze. Supervised by adviser Dr. Suresh Vadha (EEE), the team of Michael Robertson, Kevin Pinkerman, Homayoun Salour and Daniel Lo labored over 1,800 hours to produce the robotic rodent that recaptured the lost regional crown (held 1998-99) for CSUS at the IEEE Central Region Microuse Contest at San Francisco State on May 4. A second E&CS micromouse team placed second, as did the five-member “MUX Brothers” team in the design project competition (for “Parallel & Serial Multitasking SCSI-2 MUX”). All teams received cash prizes.
Annual Employer Survey Shows Boom for E&CS Grads

Job opportunities for E&CS graduates can’t get much better, according to Cici Mattiuzzi, director of E&CS Career Services.

The darkest days of the California Recession, characterized by massive layoffs, hiring freezes, restructurings and continuous forecasts of economic doom, have finally ended, replaced by a hiring frenzy bearing no resemblance to the painful past few years.

Representatives from a record 58 companies — 67 percent more than in 1995 — who attended the annual E&CS Job Fair on March 22 would certainly agree. Mattiuzzi reports that nowadays the most pressing questions for graduating seniors are, “Which offer should I take?” and “Can I negotiate for more money?”

The annual E&CS spring survey of employers of technical professionals gives the most positive projections in over a decade for hiring computer science professionals, computer engineers and electronics engineers; civil and mechanical engineers are also in demand.

In late January, the survey questionnaire went to 509 Northern California employers with a history of hiring CSUS engineering and computer science graduates. Employers were asked to project the number of anticipated job openings in those areas over the next six to 12 months. By mid-April, 102 companies had responded to the survey; 100 of the returned questionnaires contained usable information. On these, 66.7% of the companies indicated plans to hire 4834 technical professionals within the next six to 12 months. By contrast, the 1995 survey projected only 2900 openings.

Sixty-four percent of these companies expected openings for computer scientists; 55% for computer engineers; 53% for electronics engineers; 38% for mechanical engineers; 34% for civil engineers; 17% for mechanical engineering technology graduates; and 7.6% for biomedical engineers.

Survey data indicate that the consulting industry will offer the greatest number of positions (27% of projected openings), followed by the computer electronics industry (26% of openings). The federal government accounted for 21% of the openings (the FBI is looking for 1000 technical professionals), the telecommunications industry accounted for 5.7% of the openings, and the defense electronics industry projected 3.7% of the openings. Some of the weakest sectors reporting were banking, construction, utilities, state government and municipal government.

To prepare E&CS students to take advantage of the hiring boom, Mattiuzzi offered a variety of workshops earlier this summer covering summer job seeking, career planning, job search strategy, interview techniques/on-campus interview procedures, resume writing/portfolios, and Internet job seeking.

To keep abreast of job listings and upcoming career-related workshops, classes and events, Mattiuzzi invites E&CS alumni to visit the Career Services home page at http://hera.ecs.csus.edu:80/career/. Services to employers are also described.

E&CS Outreach Programs Hold Annual Awards Ceremonies

An NSF-funded expansion boosted Capital Center MESA’s (Mathematics, Engineering, Science Achievement) numbers to nearly 5000 in grades K-12, requiring two awards ceremonies to accommodate attendance exceeding 1300. Presentation of industry-funded (NEC Electronics, Aerojet) awards for academic achievement and advisor service gathered students, parents, teachers, advisors, school officials and representatives from industry, CSUS, and UC Davis. The photo shows Edward Kemble Elementary School awardees posing proudly with Gaspar Garcia, Sacramento City Unified School District board member (rear, far left), SCUSD Deputy Superintendent James Sweeney (rear, third from right) and their teachers at an Awards Brunch for 45 MESA elementary schools, on May 18 at the Red Lion Hotel. MESA middle/junior high school achievers and advisors were feted at the 19th Annual Awards Banquet on May 16 at the Radisson Hotel, hosted by Hewlett-Packard and Versar Inc.; Mayor Joseph Serna opened that event. Companion outreach program BEST’s (Business Education Science Team) Fifth Annual Awards Banquet was held at the Sacramento Zoo on May 22; cackling monkeys and roaring lions punctuated award presentations to outstanding K-12 students as 400 guests from schools, participating districts, MESA, CSUS, and eight sponsoring companies looked on.
Majid I. Rahimian: Alumnus on the Rise

Majid Rahimian exemplifies the American Dream.

Rahimian (MSEEE'87) is executive vice president of Motion Control Engineering, Inc., a hugely successful local company that designs and manufactures sophisticated microcomputer-based elevator control and monitoring equipment for an international market.

Like his older brother and business partner Javad, Rahimian left his native Iran to study electrical engineering at UC Davis. He returned home in 1975 after he earned his B.S., but came to Sac State in 1979 with his wife Maryam — she for a B.S. in the Biological Sciences Department's clinical laboratory technology concentration, he to pursue an M.S. in electrical and electronic engineering.

Rahimian took a job at the California Department of Water Resources after completing his coursework (with a 4.0 GPA), but was immediately restless; he longed to work in industry. He learned from his favorite professor and mentor, Dr. Ron Becker (CpE), that a small company that designed elevator controls was looking for an engineer. Although his first interview went well, he decided to send Javad to the second; Rahimian already had a job and still had to finish his master's thesis, but his brother had just returned from Iran and was looking for work. Javad was hired; a month later Rahimian joined him.

The Rahimian brothers met their future partner, Sacramento Don Alley, at that company. The trio later started their own elevator controls company in 1983.

The next two years were a struggle. Living off their savings, dangerously close to bankruptcy—even riding their bikes to work to save money—they continued to research and develop their designs. They rented their first small space, near Mather AFB. CSUS was among MCE's first customers, purchasing their first product, a "talking elevator," to assist visually impaired users in the old library building. When the company managed to market a design for a control system for hydraulic elevators, everything fell into place.

MCE's ascent from that initial ground-floor stall has been dizzying. Millions of people in the U.S. and abroad now use thousands of elevators running on MCE components, and the company is planning to expand further to new markets in South America and the Pacific Rim. Javad Rahimian is president of MCE, which now employs about 340 at its 80,000-square-foot Rancho Cordova facilities.

The company designs and manufactures a diversified line of products for companies of all sizes, even for famous giants Otis and Schindler — any company that makes elevators or installs them in new or modernized buildings.

"Building and customer sizes are not relevant. We are the only company that covers such a spectrum, all the way up to Chase Manhattan headquarters in New York," said Rahimian. Among its Sacramento projects MCE counts the elevator controls for the Sacramento County courthouse and a modernization at the prestigious 555 Capitol Plaza building.

Rahimian is very excited about the company's new products, which include its 12-pulse SCR, a drive system for DC motors. "We are unique in manufacturing this product in the U.S. It keeps electrical and mechanical noises down," he said.

See Majid Rahimian, page 14.

New fall and spring B.S. and M.S. graduates and their families joined School administrators, faculty and staff for a Saturday picnic lunch in the ECS patio on May 18 to celebrate their impending status as ECS alumni. Dean Das introduced Ron Smith (BSCE'62, MSCE'96), CSUS Alumni Association president, and John Schimandle (BSEE'79), ECS Alumni Chapter officer. The speakers urged new grads to be proud of their degrees and to benefit the University, School and themselves by maintaining strong ties as alumni.
Astronaut
Continued from page 3

experiments with crystals and plants. Breathtaking video footage and other information collected during the Mir rendezvous will assist future Shuttle dockings with the space station. Reading the collective mind, she showed a slide of the Shuttle’s pink toilet with a padded thigh bar that “keeps you from drifting away at critical moments.”

Several questions afterward centered on Voss’ gender. She observed that the proportion of women selected has been pretty constant over the years (20 percent) and closely approximates their number among the 2500 applicants vying for 20-30 positions in each astronaut class. There were 23 trainees in her class — the 13th — five of whom were women. “That is equal access,” she said. Admitting that she didn’t know whether this reflected a policy decision, she added, “I feel I have been treated fairly at all times in NASA.” Asked why there is such a small number of women who choose science- and math-based fields, she responded, “I have not a clue.”

Voss advised astronaut aspirants to earn at least a bachelor’s degree in science or technology, plus gain three years of practical experience. Eleven of her classmates were military personnel. Personal assets are also very important, including good speaking ability (she speaks publicly at least once per month). Insisting that there is “no secret edge in selection,” she emphasized that “what NASA does look for is excellence.” “Do what suits you best. . . . Don’t try to fit yourself into the wrong hole.”

Rather than the kind of religious experience in space reported by some astronauts, Voss said that instead, participating in the space program confirmed the view of her “solidly rooted family” of the interrelationship of all humanity. One of the space program’s most important benefits, she said, has been international cooperation; it is now difficult to ignore other nations or to view them as enemies. Beyond political gains, she finds past investment amply justified (“besides Tang and microwave ovens”) by desktop computers and other products made possible by semicon-
tator advances, and by new drugs based on protein crystal experiments.

Her favorite part of the spaceflight experience, Voss concluded, was “being on a real integrated team” where everyone — including the ground support team — shares and helps one another solve problems. “People in NASA are such a wonderful team; coming to work every day is a joy.”

Prof. John M. Gwynn Jr.: A Winning Hand at E&CS

CSUS and E&CS both got lucky when Dr. John M. Gwynn Jr. joined the faculty in 1976; and both honored him this year with awards for outstanding teaching.

The computer science professor and internationally-recognized gambling game expert was one of only eight faculty who received 1995-96 CSUS Outstanding Teaching Awards at a special reception last May 16. E&CS presented its 1996 Outstanding Teacher award to him at a faculty/staff luncheon on May 17 and recognized him again at Commencement.

On receiving the CSUS award, the modest Gwynn commented that he “was humbled to be in such illustrious company.” He was also immensely pleased to be singled out by E&CS where “so many of our faculty are highly renowned.”

Gwynn left his previous post at Georgia Tech, preferring the teaching emphasis at CSUS. He was inspired to model himself after his father, “one of the greatest teachers I’ve ever known.” The senior Gwynn was an education professor at the University of North Carolina-Chapel Hill for over 40 years. Gwynn took his B.S., M.S. and Ph.D. degrees in mathematics at UNC.

Explaining his love of teaching, Gwynn “enjoys being with the young people” while satisfying the need he feels to be performing a service. “I also like being my own boss, which is what you are in the classroom,” he added. His teaching specialties are system software for assemblers and compilers, and formal languages and automata.

His other major academic interest is in computer analyses of gambling games, which he does as a service to the “gambling community.” There is overlap: “It takes a lot of software to handle these games, so my students know I’ve practiced what I’m preaching.” He doesn’t take advantage of his expertise at casinos (“It isn’t that easy anyway”), although he confesses he may be able to “minimize the house advantage.” He regularly presents papers at interna-
tional conferences sponsored by the University of Nevada-Reno’s Bureau of Gaming Research, and looks forward to the next in Montreal.

Three of Gwynn’s students have applied the theoretical analyses and use of simulations of this research specialty in master’s theses based on the game of blackjack. One was a study of complex card counting (finding: effort was greater than gain) and two examined true casino shuffling vs. random shuffling (outcome for 450 million hands: no statistically significant difference).

Gwynn’s wife Julie is also devoted to teaching and shares his keen interests in films and the Atlanta Braves. A lecturer in computer science at CSUS for 11 years before retiring, she and John both won MPPP (Meritorious Performance and Professional Promise) awards in the same year. Their children are pursuing other careers.
MADELINE FISH (IMSA Engineering Program) was a panel member for a National Technological University videoconference on Dec. 5, sponsored by the National Science Foundation. The program focused on enhancing student success through a model Introduction to Engineering course.

DR. LESTER H. GABRIEL (CE Emeritus) headed a research team to resolve discrepancies in material requirements for high-density polyethylene drainage pipe for specific agencies. His study was funded under the National Cooperative Highway Research Program, administered by the Transportation Research Board. The findings have been published in a 63-page document.

DR. JOHN M. GWYNN JR. (CSC) was honored by both the University and E&CS with Outstanding Teaching Awards for 1995-96 (story on p. 12).

DR. RALPH B. HWANG (CE) was invited by the National Taiwan University last January to advise and review the Phase II progress report for “An Investigation for the Reservoir Operation Rule Curves During Severe Drought Years in Taiwan,” his three-year collaborative research project with the University’s Hydraulic Research Institute. He also presented a seminar to the University’s Graduate Research Institutes of Civil Engineering and Agricultural Engineering on “The Proposed Guideline for the Dam-Break Inundation Mapping Procedures and Hydraulic Analyses in the State of California,” the guidelines were developed under his $167,500 grant from the California Office of Emergency Services.


DR. FREDERICK H. REARDON (ME) presented his paper, “Nonlinear Dynamics Model of a Pulsating Combustion System,” at a work-in-progress poster session on General Modeling at the 26th International Symposium on Combustion, July 8-13. He toured several research laboratories in Italy.

DR. RICHARD THAYER (CSC) received $18,000 from Lockheed Martin Missiles & Space to support five projects involving students: Real Time Object-Oriented Analysis, Evaluation of Microsoft COM (OLE) Distribution Object Technology, SEI Criteria Software Training Program, CCOMO 2.6, and Automated SW Synthesis.


Milestones

Ottie Cargill, CE Secretary, and Gwen Smith, Administrative Operations Analyst II in the E&CS Dean’s Office, were honored at the Staff Employee Awards Luncheon on April 4 for, respectively, 25 and 15 years of service to CSUS.

1995-96 Faculty Promotions

Dr. Cynthia Desmond (EEE) to Associate Professor; Dr. Jean-Pierre Bayard (EEE), Keith Bisharat (CE), and Estelle Eke (ME) to Professor.

1995-96 Retirements

Dr. Trevor Davey (ME), Dr. Donald V. Steward (CSC); Glen Nicholson (ME Technician).

Congratulations to Dr. Jose Grande (ME) and his bride, Imelda Vargas, who were married on March 23.

Fond farewells to Andrea Hicks, who resigned as director of the BEST (Business Education Science Team) pre-college program to become 4-H Advisor for the UC Cooperative Extension’s El Dorado Co. on Aug. 2, Naples, Italy. Among Adams left CSUS after nearly 10 years as a student, MEP staff member and E&CS coordinator for the CSUS Cooperative Education Program, to direct the co-op program at South Puget Sound Community College in Olympia, WA.

Our home page at http://www.ecs.csus.edu keeps you in touch with the School. Come visit us.
Alumni Notes

ABDEL BACHAR (MSCE’94), a response engineer at Hewlett-Packard (Roseville), is working on a second M.S. at CSUS, in computer science. He is also a part-time instructor in an E&C computer engineering lab.

BSCE’71 classmates ORIN BENNETT of Bennett Engineering Consultants and MIKE SMITH, president of MHM, Inc., have joined forces to open MHM Sacramento in Roseville, to serve Sacramento and Placer counties.

DAVE A. BOILD (BSME’93) is a QA engineer at NUMMI in Fremont, CA.

JOSE J. CHIRINOS (MSEE’79), is director of sales for South America at AT&T, Coral Gables, FL.

TAMARA L. DAHLGREN (MSCSC’93) works at UC/Lawrence Livermore National Laboratory in systems programming in high performance storage systems. She is married and has two children.

CLAUDIA J. DAVIDSON (BSCE’93) left Bechtel in August 1995 and now works for Wells Fargo in Daly City as a database administrator for Oracle; she is learning to be a DBA for Informix, DB2, and Web server.

LINDA DAVIS (BSEE’84, MS Eng, Mgt.’91), vice president of the SMUD Board of Directors, is running for reelection to her Ward 1 (Citrus Heights, Orangevale and Fair Oaks) seat on the board. Alumni who missed her Sept. 5 fundraiser can call Rich at (916) 641-8471 to help win this nonpartisan election. Linda is an engineer at the California Energy Commission.

GARY GAUGLER, Ph.D. (BSEE’70) left federal service after 25 years for the new position of chief engineer at the TRW Systems Integration Group in Sacramento. He was chief scientist/engineer at Sacramento Air Logistics Center, McClellan AFB, for the past seven years. Gaugler received his MBA from City University, Bellevue, WA in 1994, and received his doctorate in management information systems from Walden University, Minneapolis, MN.

TODD W. GREENWOOD (BSEE’86), associate traffic engineer for the City of Stockton, manages a $6.5 million citywide traffic signal control system.

NICHOLAS B. KEMP (MSEE’73) is marketing manager at Northrop-Grumman in Baltimore, MD.

MASOOD MESBAH (BSME’81, MSME’88) received his Ph.D. in mechanical engineering at UC Davis in June. Over the last 15 years, he has earned his degrees while working in the Engineering Division of the California Department of Water Resources.

GEORGE M. McHugh (BSEE’64), disabled from Parkinson’s Disease, would like to hear from fellow E&C alumni. You can write him at 10 Tupelo Drive, Hingham, MA 02043.

PAUL S. MILLER (MSCSC’84) is a senior software engineer at Tektronix Video Networks Division (formerly Grass Valley Group) and lives in Nevada City, CA with his wife, two children and assorted small animals.

DAVID A. ORRIS JR. (BSCE’90) is a consultant in medical database design in the Seattle area.

ERIC PULISPER (BSCE’87) works on HP OpenView, specializing in network topology discovery and layout, at Hewlett-Packard in Fort Collins, CO. He and his wife have five sons.

JOANNE ROCK (BSCS’84) (formerly Eldod) is a senior consultant in the Parallel Systems Technical Consulting Group for NCR in San Diego, where she lives with her two sons.

B. JAY SCHROCK (BSCE’80) received a Service Award from the California Water Environment Association for his outstanding work as chairman of the Technical Practice Committee of the Existing Sewer Evaluation and Rehabilitation Task Force, at CWEA’s annual conference in April.

SAMARPREET K. SIDHU (formerly Hundal) (MSEE’93), is a design engineer at Intel Corporation in Folsom.

FARHAT SIDDIGI, Ph.D. (MSCE’71) is principal engineer at two Orange, CA firms: Geo-Environmental, Inc. and Coast Engineering Group.

RON SMITH (BSCE’62, MSCE’96), CSUS Alumni Association president, addressed new E&C grads at the Spring Commencement, where he received his M.S. in civil engineering.

EDWARD B. SYLVESTER (BSCE’60), president of Sylvester Engineering, Inc., a civil engineering and planning firm with offices in Nevada City and Truckee, was appointed to the California Transportation Commission by Gov. Wilson in March. Sylvester has served as a board member of the Nevada County Transportation Commission for 20 years; board chairman of the Nevada County Business Association; board member of the Nevada County Radio Broadcasters; member of the executive committee of the Westamerica Bancorporation; and on the board of directors for High Country Tek.

WING K. TSE (BSCM’77) is principal estimator at The Ralph M. Parsons Co. in Pasadena.

RAY YEP (MSEE’74) has been elected to the board of directors of CH2M Hill. As senior vice president and Asia Pacific general manager, Yep oversees the company’s Southeast Asia operations, and currently lives in Singapore.

Capt. TIMOTHY W. SHAFER (BSME’87), U.S. Air Force pilot and aircraft commander, was among the 34 who perished in a plane crash last April on the Croatian coast with U.S. Commerce Secretary Ronald H. Brown. Shafer was buried with full military honors at Travis AFB. Donated funds have purchased a memorial bench which will be placed in the CSUS arboretum.

Majid Rahimian

Continued from page 11

MCE is also venturing into remote monitoring for elevators, which enables contractors and building owners to perform diagnostics from very distant locations.

Like many alumni, Rahimian appreciates the practical, hands-on orientation of E&C degree programs, and has hired many graduates. He has also engaged E&C faculty as consultants. “The School has been a good resource for us — for new graduates and for other services,” he said.

His young company has won three prestigious awards in as many years: the Fortune and Arthur Andersen & Co. Enterprise Award for Best Business Practices (1996); the Coopers and Lybrand and Comstock’s Vanguard Award for International Business (1995); and the Spirit of NAEC Award, presented by the National Association of Elevator Contractors (1994).

The father of three daughters aged 10, 13 and 16, Rahimian is confident about MCE’s prospects: “Some of the products in R&D will put us in a good position to capture more of the market, and the market itself will expand. We hope to continue to grow for the foreseeable future,” Rahimian said. Mentor Becker is clearly impressed: “Majid is probably the most successful of all my students in starting their own company.”
Message to New Alumni

Why is it a secret? Why is it that only a select few know? The CSUS School of Engineering and Computer Science routinely wins competitions against the most well-respected programs in the country, and hardly anyone knows.

For the second consecutive year, the E&CS civil engineering team won the Mid-Pacific regional crown — competing against the likes of Cal and Stanford — for a chance to compete in the ASCE National Concrete Canoe Competition. In 1995, we placed SECOND IN THE NATION, overcoming powerhouse engineering schools such as MIT, West Point and Michigan State, and came in 6th in the 1996 national event. But hardly anyone knows.

A team of our computer science students designed PC^2, a software program which is used to run the ACM (Association for Computing Machinery) International Collegiate Programming Contests. It is no wonder that Hewlett-Packard, a company that seeks new engineers, computer scientists and business professionals from all over the country, consistently ranks CSUS among the top 10 schools from which it recruits—an elite group that includes UC campuses, Stanford and MIT. But hardly anybody knows.

CSUS structural engineering students recently competed in a regional bridge design competition sponsored by the Structural Engineers Association of Central California against UC Davis and other top universities (see “Briefly,” p. 5). And guess what? CSUS won!! But hardly anybody knows.

There are other examples. To celebrate its 50th anniversary in 1998, the University embarked on a $50 million fund-raising campaign. Each school in the University has a fund-raising goal. Some of the private companies that wish to partner with a university for research know — and others are discovering — the accomplishments of the

CSUS School of Engineering and Computer Science. With their help, E&CS was the first school in the University to meet its campaign goal. SOMEBODY knows.

E&CS grads have a right and an obligation to be proud of their School. Whenever we have the chance, let’s talk about our successes. Let’s make it our goal to have everybody in the country — and the world — know.

In-kind
Continued from page 4

computers, laser printers, laptops and office machines. (In turn, E&CS donated thirty 286s to Theodore Judah Elementary School in Sacramento.) Both Intel and Silicon Graphics have also responded to the need for more advanced computers, particularly in the Computer Science Department.

Space limitations preclude listing all of the companies and individuals who contributed other in-kind gifts — large and small — totaling over $2,815,000 in 1995-96. Unquestionably, unrestricted cash allows the School maximum flexibility in meeting needs and maximizing opportunities; but with cash in short supply, in-kind gifts are critical to maintaining quality programming.

You Are News!

What articles would you like to see? If you’d like to share some information with your former classmates and us, just fill out this form. Please let us know when you move, so you can get the News faster and save us postage. Thanks for your help — and we appreciate your donation of a stamp and envelope!

Name
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Middle
Last
(Maiden)
Sex M F

Name while attending CSUS, if different

Degree
BS
MS

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Fall
Spring

19

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Title

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Comments:

Yes, I want to be involved in the CSUS Alumni Association Engineering and Computer Science Chapter!

Categories of membership (check one):

$35 Annual Individual
$350 Life Individual
$40 Annual Friend Individual
$45 Annual Joint Spouse
$400 Life Joint Spouse
$50 Annual Friend Joint Spouse

Make check payable to CSUS Alumni Association. Thanks for your membership!

Please send correspondence and/or membership dues to:

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CSUS School of Engineering and Computer Science
6000 J Street
Sacramento, CA 95819-6023
(916) 278-6629 FAX: (916) 278-5949 carettob@csus.edu

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E&CS Open House Draws 800 Local High School Kids

Approximately 800 students from 33 Sacramento-area high schools attended E&CS Open House last February 23, in celebration of National Engineers Week. The event featured lab tours, demonstrations, exhibits and videotapes — all designed to introduce students to E&CS academic disciplines. Visitors met students, faculty and staff, and enthusiastically vied for 20 scientific calculators donated by Hewlett-Packard (Roseville). The calculators were awarded in a drawing and as computer programming contest prizes.

DOUBLE YOUR DONATED DOLLARS

What if you can afford only half of the gift you'd like to give to E&CS?

Many employers will match employees' contributions dollar for dollar. Yours may be one of them.

Check with your personnel office.

Mail the matching form with your gift to:

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Every donated dollar makes a difference at E&CS.

DOUBLE THE DOLLARS...
DOUBLE THE DIFFERENCE!!

BME Lecturer Tom Gray applies electrode to bicep of a student for an electromyograph (EMG) measurement. The wire is attached to an isolation amplifier which is connected to a computer running a LabVIEW virtual instrument that displays the EMG signal. He explained how the EMG is used for movement analysis and to diagnose muscle disease.

EEE Prof. Miroslav Markovic (far right) demonstrates electrical transmission via a Tesla coil to fascinated young visitors to the Power Laboratory.