E&CS Computer Science Professor Receives Major Grant from HP

Hewlett-Packard has awarded an equipment grant of 10 new high-performance workstations and a server, together with network infrastructure, to Computer Science Prof. Isaac Ghansah. The equipment, valued at $133,677, will form a dedicated laboratory environment supporting graduate and undergraduate instruction in data communications, networking, and distributed computer systems.

The equipment is now up and running in the Communications and Networking Laboratory (ECS 2005). According to Ghansah, students in these areas will greatly benefit from the dedicated environment and from both the quality and number of computers.

A dedicated environment is necessary for courses and projects involving data communications, networking, distributed computer systems and network security because several computers are typically running simultaneously and/or superuser privilege is required. Because the older machines in the lab were used for several other courses as well, Ghansah's students were unable to carry out assignments that required undisturbed connections and client/server applications, or multiple machines running under different environments.

The new machines are significantly faster than predecessor SUN 3 machines, and the new server is the most powerful in the School. Ghansah is updating his courses, expanding the number of topics presented and the variety and number of hands-on assignments made possible by the dedicated, networked workstations. He expects that students will gain a deeper understanding of different issues in networking and distributed systems such as security, load-balancing, automatic login and router configuration.

Ghansah noted that the increased number of workstations in the more modern client-server environment will accommodate a higher enrollment in existing and proposed courses taught by himself and by other CS faculty in the communications area. Moreover, graduate students will be using the machines for both class projects and master's projects. He anticipates use by over 400 students annually.

Ghansah received the equipment grant under HP's highly competitive, nationwide Instructional Equipment Grants Program. HP engineer Brian Dowling (BSEE'84) sponsored the proposal.

E&CS 50th Festivities Feature Past, Present, Future

E&CS celebrates the University's 50th anniversary during November with a series of events that highlight the School's past, present and future.

"Celebrating Industry/Education Partnership" is the theme of the first event, a gala dinner on November 4 in the USU Redwood Room. Executives of companies extensively involved with the School's departments and degree programs will be honored. The featured speaker will be Dr. Ravi Jain, alumnus (BSCE'61, MSCE'68), former chief of the U.S. Army Corps of Engineers Environmental Division, and founding director of the Army Environmental Policy Institute. Jain is now associate dean for research and international engineering and professor of civil engineering at the University of Cincinnati. Early in his career, he worked locally for the California Department of Water Resources and for the Spink Corp. Invited guests will include faculty, administrators and donors.

All are invited to attend the "Student, Faculty and Alumni Showcase," a look at the School's past and present. The Showcase will be held on November 11 in the Redwood Room, and will begin with a reception at 3:30-4:30 p.m. From 4:30-5:30 p.m., Dr. Lester Gabriel (CE emeritus) will lead a slate of speakers who have promised tales tall and short, light and serious, about the School's earliest history (a sampling: the first computer; "borrowed" air conditioning; and dissected sculpture). Besides Gabriel, speakers will include Mrs. Naomi Kabakov, widow of Dr. Edward Weinberg, the School's first dean and a pioneer designer of heart valves; Dr. Trevor Davey,

See Festivities, page 12
A Message from the Dean

The 1997-98 academic year has started and promises to be a very busy year for the School of Engineering and Computer Science. All of our undergraduate programs are due for reaccreditation visits this fall: Mechanical Engineering Technology on September 22-23; Computer Science on October 6-7; and Civil, Computer, Electrical and Electronic, and Mechanical Engineering on October 27-28.

In addition, the statewide Engineering Liaison Committee will meet on our campus to celebrate its 50th anniversary on October 22-24. We expect an attendance of about 200 or more from all UC, CSU, and community college campuses. This also happens to be the year during which Sac State celebrates its 50th year of existence. Several events have been planned by our School for the month of November, to mark the occasion. These include a gala dinner on November 4 celebrating the industry-education partnership.

Student enrollment in various programs in the School appears to have stabilized to some extent. The faculty and staff of the School are continuously working to provide a more student-centered environment. However, as is true in any institution of higher education in the country, we are asked to deliver more for less. Towards that end, we will be looking for a greater collaboration with industry in the area, and also asking for the help, good will and advice of our alumni and friends.

Accreditation Boards to Review E&CS Programs

Teams of visitors from both ABET (Accreditation Board for Engineering and Technology) and CSAB (Computer Science Accreditation Board) have been on campus this fall to review undergraduate degree programs offered by E&CS for reaccreditation.

Such visits are critical: Reaccreditation ensures the continuing high value of E&CS degrees, and attracts new students. A positive evaluation essentially means that a degree program measures up to national criteria. Deprivation of accreditation would result — in the case of engineering — in seniors losing the privilege of taking the EIT (Engineer-In-Training) exam — the first step required under California law towards registration as a professional engineer—before they graduate (the alternative: waiting three years following graduation while accumulating engineering experience). Consequently, all of the departments have spent long hours gathering and assembling data required by the accreditation boards.

The five-member ABET team (a chair and one evaluator per program), plus two observers from the California Board of Registration and the Canadian Engineering Accreditation Board (CEAB), will arrive on October 26 and will spend nearly three days examining facilities and labs, course materials, student transcripts and student participation in professional societies. The team will conduct extensive interviews with University officials, E&CS Dean Das, E&CS department chairs, and selected faculty, staff and students. Team members will consider computer and library use; effectiveness in meeting design objectives; and lab quality and use. The Canadian observer is Dr. Mohan Mathur, CEAB vice chair, who selected CSUS as one of three U.S. campuses to visit. A separate ABET team evaluated the Mechanical Engineering Technology program on September 14-16.

The maximum period between both CSAB and ABET visits is six years. The worst possible case for established engineering programs is a “show cause” order, requiring the program to show why it should not lose its accreditation. For computer science programs, a decision not to accredit is the most drastic measure. In both cases, individual programs within the School needing correction in specific respects have a three-year period to document improvement in a report or in a revisit.

The four-member CSAB team, which visited on October 6-7, had three representatives from academia and one from industry. CSUS won six-year reaccreditations both times since the visits were initiated in 1985.
Dr. Ramzi Mahmood Named New Water Programs Director

Dr. Ramzi Mahmood, professor of civil engineering, has taken the helm of the CSUS Office of Water Programs, following the June retirement of long-time director and founder, Dr. Kenneth Kerri. The Office is part of the School of Engineering and Computer Science.

Kerri will remain on board as a technical advisor for the foreseeable future.

Now an emeritus professor of civil engineering, Kerri founded the internationally-acclaimed program in 1972.

"Hopefully I can continue its success," Mahmood modestly commented. "Right now I am in a learning mode. Having Ken's overall vision will help.” Mahmood is developing a business plan incorporating short- and long-term planning. The enterprise is entirely self-supporting.

The Office of Water Programs administers and monitors the U.S. Environmental Protection Agency's national field study operator training programs, which consist of nine courses in wastewater collection and treatment, and four courses related to drinking water. Every operator certification board in the U.S. and in most of the Canadian provinces recognizes these training programs; the World Health Organization promotes them throughout the world.

The training materials produced by the Office are used by individuals in the extensive home study program, by operators on U.S. Indian reservations, and by utility agencies for in-house staff training. The materials — translated into at least eight languages — are also widely used as textbooks by over 300 colleges and universities. On average, over 52,000 manuals are sold annually to more than 13,000 learners worldwide.

Mahmood, whose specialty is geoenvironmental engineering, joined the CE Department in August 1994. He was previously on staff at the California EPA's Toxic Substances Control Division and was a part-time math instructor at American River College. Besides geoenvironmental engineering, Mahmood teaches computer applications in civil engineering and a graduate course, Transport of Chemicals in Soil Systems. He earned his Ph.D. and M.S. in environmental engineering (and another M.S. in mathematics) at Utah State University in Logan, Utah. He received his B.S. in civil engineering in Iraq.

His new position will challenge Mahmood. "But I am looking forward to that,” he said.

Familiar Faces Changing Places

E&CS Associate Dean and Computer Science Prof. James (Jamie) Kho has won two prestigious honors which will keep him traveling for at least a year. Computer Science Prof. Mary Jane Lee has been appointed acting associate dean during his absence, which began in late August.

Kho, a CSc faculty member since 1973 and former department chair, is participating in the CSU Executive Leadership Program, an intensive, yearlong executive learning experience for individuals competitively chosen from the 23 CSU campuses. Kho will serve stints in the CSU Chancellor's Office and the CSU governmental affairs offices in Sacramento and Washington, as well as fulfill campus-based assignments. Concurrently, he is also among 30 individuals selected nationwide as American Council on Education (ACE) Fellows. ACE is the leading advocacy group for U.S. colleges and universities and is located in Washington, D.C. A leadership development program for senior faculty and mid-level administra-

tors, the ACE program provides the expertise and perspective that fellows need to play significant roles in education.

Lee joined the Computer Science Department in 1984 as an associate professor. She chaired the department from 1988 to 1992, and was its graduate coordinator for five semesters. Her areas of interest are computer systems performance evaluation, simulation, and database management systems. She has received a Meritorious Performance and Professional Promise award (1986) and a Computer Science Outstanding Faculty award (1992). She has served on a variety of School and University committees.

A dedicated teacher, Lee has been heavily involved in E&CS computer science curriculum development and in outreach to community colleges and high schools. For three years her teaching load included assignments at Luther Burbank High School's Academy, where students take CSUS computer science courses for college credit under the University's ACE (Accelerated College Entrance) program.

Commenting on her new position, Lee said, “I really enjoy the many diverse aspects of the associate dean's job.” She cited concerns with students, curriculum, space, accreditation, equipment, planning and fiscal matters as examples.

Lee earned her B.S. in education, and her M.S. and Ph.D. in computer science, at The Ohio State University. She was honored by her alma mater in 1994 as an invited presenter in a ceremony marking its 25th Anniversary and new building dedication.

Drs. James (Jamie) Kho and Mary Jane Lee.
E&CS Honors Faculty, Staff, Retirees

E&CS honored outstanding faculty and staff at its third annual awards ceremony on May 16. This year's event also spotlighted retiring faculty.

Honored were EEE Prof. Turen Gonen, Outstanding Teacher; CE Prof. Francois Cheong-Siat-Moy, Outstanding Researcher; and Technician Bruce Scott, Outstanding Staff.

University Provost Jolene Koester, Dr. Ric Brown, associate vice president, Research and Graduate Studies, and Robert Jones, vice president, University Affairs, presented the awards with Dean Braja Das. In her brief remarks, Dr. Koester spoke of the importance of occasions to “cherish the contributions of many people,” adding, “We would not be able to accomplish our mission . . . without the contributions of the various constituencies of the University.”

Seven newly retiring faculty members and three who retired last year received certificates from their chairs, along with a special gift of a framed rendering of the new engineering building: Profs. Leonard Hom, Kenneth Kerri, William Neuman, and Hon-Hsieh Su of Civil Engineering; Profs. Frederick Blackwell and Donald V. Steward and Lecturer Abraham Low of Computer Science; Prof. B. P. Lathi of Electrical and Electronic Engineering; and Profs. Leo Dabaghian, Trevor Davey, and John Hester of Mechanical Engineering. Hester, a former associate dean, retired last year, as did Davey and Steward.

Although they have left their full-time faculty positions, Profs. Dabaghian, Davey, Su, and Lathi will continue to teach part-time under the Faculty Early Retirement Program (FERP); Prof. Ken Kerri is staying on as an advisor to the Water Pro-

grams Office. The late Dr. Ajit Virdee, who had recently retired as CE Chair and professor, was missed at the ceremony.

The families of honorees joined the applause of faculty and staff colleagues. A reception for all in the Engineering Patio followed the formal part of the event.

EEE Professor Brings Courses to Web

On-line instruction is convenient and cost-effective: Students receive course materials wherever they can log in, and learn at their own pace. Instructors can easily design — and redesign — these materials, which are repeatedly accessible on a Web site.

Yet Dr. Jean-Pierre Bayard, EEE professor, is among the few CSUS faculty to use this new instructional mode. “This is happening all over the country at serious institutions,” he noted. He foresees great potential for Web-based courses: “We can and should move to a fully electronic, international ‘classroom.’”

Bayard has developed two on-line versions of EEE courses: Basic Circuits (Engr. 17), already offered, and Network Analysis (Engr. 117), an upper-division class which will be available on the Web in fall 1998. Access to the Basic Circuits course is restricted to registered CSUS students with specific user names.

His materials are visually exciting; some include animation. Rather than restricting students to class materials, his exercises feature different kinds of learning experiences, such as the “Webquest”. Students are directed to interesting Web sites to gather information; they then write a paragraph reporting on something they have learned during their quest (Bayard calls this the “touchy-feely section”). Since this document is electronic and put on a listserve, the information is shared by everyone enrolled. This learning experience is exploratory and interactive. “The idea is to learn, not just to ‘tally up.’” Moreover, self-paced learning is very good for people who initially fail a course, Bayard said.

Bayard can completely “operate” his course; everything is on the Web except the graded exams. Problems and solutions are provided a week later. There are “self-assessment tools” with timed questions. Students get immediate feedback and Bayard is able to gauge the response time of every student as well as the extent of their mastery. Since these exercises are not graded, students don’t cheat.

He has also presented Basic Circuits on TV via cable; it will be offered again this fall, along with the Network Analysis course. These are available to regularly-enrolled CSUS students and through CSUS Regional and Continuing Education.

Bayard sees TV distance learning as a step toward a “virtual university,” but marveled that there is not more interest in Web-based curricula in this era of scarce state resources for higher education. “You can reach so many people,” he noted, envisioning this as an area where “CSUS could carve out a niche” and gain great visibility.
E&CS Hosts Another 50th Anniversary

The Engineering Liaison Committee (ELC), a statewide organization of top engineering educators, turns 50 this year, and E&CS is hosting the three-day milestone meeting on October 23-25.

Deans and other engineering program heads representing all of California's higher education segments — public (CSU, UC) and independent universities, colleges and community colleges — meet in the fall and spring each year. Engineering deans from the University of Nevada campuses at Las Vegas and Reno are also ELC members.

ELC meetings provide a unique forum for these educators to discuss mutually important engineering education issues such as curriculum content, intersegmental articulation, teaching techniques and instructional technology, and to plan and coordinate major beneficial changes. Dr. Thomas Kanneman of the University of San Diego is the current ELC chair.

E&CS will host a formal dinner celebrating the ELC's 50th anniversary in the Redwood Room on October 24. Dr. Bob Giomi, associate dean of the UC Berkeley College of Engineering and chair of the 50th anniversary committee, will present highlights of the group's history.

E&CS Conferences Draw Multinational Participants

Within a single month, E&CS hosted two important conferences that attracted participants from around the globe to CSUS: the Heat Transfer and Fluid Mechanics Institute on May 29-30; and the Power Quality Symposium on June 12-13.

California engineers and scientists joined others from five other states and from Italy, Korea, and Peru to ponder 16 papers covering all aspects of fluid flow and heat transfer at the 35th meeting of the Heat Transfer and Fluid Mechanics Institute (HTFMI). Mechanical Engineering Prof. Frederick H. Reardon served as conference chair of the gathering, which meets every two years. Organized in 1948 as an annual regional meeting, the HTFMI has grown to become an international forum for the presentation and discussion of scientific and technical work in this area of interest. CSUS has hosted the meetings and also published the conference Proceedings since 1982. Reardon and Dr. Ngo Thinh, ME Department chair, are co-editors of the internationally distributed volume. Readers of this year's Proceedings will find solar energy, flame imaging, space propulsion, and groundwater runoff included among the topics.

Papers presented at the Power Quality Symposium addressed causes of and possible corrections to reliability problems that annually cost billions of dollars. Tom Tanton, principal policy advisor at the California Energy Commission, was the keynote speaker of the annual event, which this year drew participants from both public- and private-sector organizations in the U.S. and Canada. Conference sessions focused on power quality considerations in new electricity markets; basic research topics in power quality; applied research and development in power quality; and novel electrical energy storage and generation systems. The general conference chair was David Blottie, SAIC vice president and member of the E&CS Industrial Advisory Board. News about next year's symposium can be found at its Web site (http://gaia.ecc.csus.edu/~hipec/pq98.html) or by contacting Dr. John Balachandra, conference organizer and EEE professor, at CSUS (278-7347).

An earlier daylong Power Quality Workshop on May 29 at CSUS was led by Dave Mueller of Electrotek Concepts, Inc., who presented an overview of important power quality concerns that affect electric utilities and their industrial and commercial customers.
Briefly . . .

- Intel is actively recruiting and hiring CSUS students; our campus ranked 11th nationwide based on the number of recent college grads hired during FY 96-97, and 5th in the number of student interns hired during the same period. Over 100 CSUS alumni attended a luncheon at Intel’s Folsom facility, co-sponsored by the CSUS Alumni Assoc. and the E&CS and School of Business Administration alumni chapters. There are about 240 alumni among the facility’s workforce. E&CS profs. Nikrouz Faroughi (CSc), Dwight Freund (CSc) and Suresh Vadva (EEE) worked there last summer under a new faculty exchange program. • MEP received a grant of $15,000 from Intel Foundation in September for program support. • Hewlett-Packard has renewed its support of the GRAD_2000 scholarship program with a check for $20,000; the industry-funded program provides tuition/book scholarships and internship opportunities to high-achieving EEE, CSc and EEE freshmen. Intel and Folsom Research are also sponsors. • Stryker Endoscopy donated a camera system, light source and monitor valued at $11,750 to the BME program. • EDS provided $8,500 for MEP’s experimental Project Excel program to improve language processing skills. • NEC Electronics Inc. contributed $21,000 for MEP support. • International Computer Power contributed components, valued at $13,000, to the EEE Dept. to assemble a DESS (Dynamic Energy Storage System) demonstration kit. • Profs. Cynthia Desmond (EEE) and Isaac Ghansah (CSc) received a total of $14,500 in May from Lockheed Martin for project support, under the Lockheed Martin-CSU Partnership Project. • XILINX, Inc. made an in-kind donation of electronic components and software to CPE valued at $6,402. • Tunde Gyurics (BSEE’97) won second place last May 3 at the IEEE Region 6 micromouse and paper contests, for her paper and presentation on “Optical Fiber Amplifiers.” Gyurics and a Biological Sciences student shared the honor of “Outstanding Graduating Senior of 1997” at the CSUS Alumni Association’s Senior Achievement Awards ceremony on April 26; Gyurics was cited for her academic success (3.93 GPA), achievements in research activities, and contributions to IEEE and Tau Beta Pi. She is pursuing a Ph.D. at Stanford in electrical engineering. • Jaime Robles and Lam F. Tsui are the first recipients of renewable GenCorp Aerojet scholarships, awarded to high-achieving transfer students from community colleges who major in ME. • BME graduate student Denise L. Forkey will present a “Comparison of thumb and forearm muscle effort required for laparoscopic and open surgery using an ergonomic measurement station” (BME Prof. Warren Smith, and Ramon Berguer, M.D., coauthors) at the Engineering in Medicine and Biology Society Conference, Chicago, Oct. 30-Nov. 2. The BME group will present a three-day exhibit of virtual instrumentation (VI) for studying the ergonomics of laparoscopic surgery, at the American College of Surgeons 83rd Annual Clinical Congress, Chicago, Oct. 12-17. They will acquire and plot electromyogram data from arm and hand muscles of conference attendees as they use various laparoscopic surgical instruments, demonstrating relative difficulty in using the instruments. The SAGES professional society funded preparation of the VI ergonomics station and travel costs. • Five BME graduate students presented papers at a special session, VI in Biomedical Engineering, at the Virtual Instrumentation in Education Conference sponsored by National Instruments, Inc., at UC Berkeley, June 27: Peggy Y. Chen, Denise L. Forkey, Alison E. Gump, Walter J. Rawlins IV and Kimberly A. Riseling. • Alejandro Castillo, a CPE major, received a $3,000 renewable scholarship from the prestigious national NACME/Bechtel Corporate Scholars Program for the 1997-98 academic year; the award criteria include academic achievement as a freshman. Castillo, Dorothy Browne and Luis Enriquez, all MEP students, received Anthony J. Leones scholarships; recipients are required to participate in a public community service internship during the scholarship year. • SACTO (Sacramento Area Commerce & Trade Organization) and Sacramento Magazines Corp. have made a joint gift to E&CS for a scholarship.

Scholarships promote earlier graduation and high achievement by enabling recipients to concentrate on their studies rather than taking excessive part-time work. A named scholarship is an excellent way to perpetuate the memory of a loved one. Since our last issue: • Alan Virdee, son of the late CE chair Dr. Adjit Virdee, has established a memorial scholarship to assist financially needy upper division CE students. • The Kenneth E. Duncan Memorial Scholarship for upper division CM students was established by his good friend and former partner Marvin Flaherty of Seattle, WA, who organized the fund drive. Duncan was a respected local contractor-developer who co-founded Carmichael Construction Co.
Prof/Alumna Cynthia Desmond Develops “Cleanroom” with Industry Support

Faster, smaller, cheaper: This is the drumbeat of the electronics industry as it marches into virtually every aspect of American life.

Dr. Cynthia Desmond, EEE professor, is at the forefront of the band of researchers working to develop and improve the solid-state semiconductor devices and sensors that are the very heart of medical, automotive, aerospace, military, and consumer electronics applications. Wafers made of silicon and other elements — and the miniscule circuits and devices etched into and built upon their surfaces — are critical parts of these devices. It is now possible to place an entire gas chromatograph — once a huge laboratory machine — on a single wafer, enabling workers to detect chemicals in the field. Cellular phones, calculators, hearing aids and pacemakers are more familiar applications of this technology.

Desmond is investigating wafer bonding processes involving different materials, temperatures, and surface characteristics. Successful bonding enables stacking of chips into ever smaller spaces. But all bonding techniques can succeed only under extremely clean, controlled conditions, since even one dust particle can ruin a whole series of circuits, compromising the quality of the devices in which they are used. A special facility — a “cleanroom” — is necessary.

Interest in semiconductor fabrication runs high in both private and public sectors: Demand from corporate giants such as Intel, Hewlett-Packard and NEC, burgeoning start-up companies, national laboratories, and military research agencies has fueled an immediate need for engineers with this expertise. Surprisingly, related teaching and research are very limited in the CSU system. But at CSUS, offerings of new undergraduate and graduate courses developed by Desmond in semiconductor fabrication and advanced semiconductor devices have become very popular.

Although Aurora Electronics had donated equipment for an entire cleanroom and E&CS had allocated lab space, Desmond initially had no funds to establish a semiconductor research program and lab facility. She then turned to outside sources. Silvaco International provided valuable software, and other cash and in-kind donations soon came pouring in from Intel, NEC, Motorola, Lockheed Martin and the Electric Power Research Institute. Desmond’s practice of actively involving her students in research has helped attract keen industry interest; about 10 now work on her sponsored projects.

When Desmond discovered that working with semiconductors was a “perfect chemical/electrical marriage,” she settled on that field, earning an MSEEE from CSUS in 1989 and a Ph.D. at UC Davis in 1993. She had lectured in the CSUS EEE Department even before joining the faculty permanently in 1993. Post-doc summer stints at the Office of Naval Research and Lawrence Livermore Laboratories extended her knowledge, provided interaction with top scientists, gave her access to excellent lab facilities, and led to collaborations for publications and offers of equipment donations.

Desmond deeply enjoys working with CSUS students. “It makes me feel good that they can study here, earn their degrees, and get good jobs. And they are so appreciative,” she said. Drawing on her experience in both the UC and CSU systems, Desmond finds no difference in students’ intelligence, but rather in diverse viewpoints stemming from different backgrounds. Whereas UC students tend to come from more affluent, educated families, many of our students’ families are immigrants or poor and ours are often the first students to go to college, she observed. Desmond shares this background: Her parents didn’t attend college. She didn’t even know what engineering was until a counselor suggested it after learning that she loved chemistry, physics and calculus. Desmond was also older than the national norm (29) when she finally received her B.S. (in chemical engineering) from UC Davis.

She especially enjoys working with the women in her classes. They frequently ask how she manages to juggle all of her activities — teaching, research, EEE Department graduate studies coordinator and wife and mother (of four sons).

“I feel connected to this place. Although I know I could work someplace else, I feel happy on my job,” Desmond said. “This area is booming just now with NEC, Intel and other companies. So I am also helping to fill the needs of the community. This makes me feel good.”

Express Your Appreciation

If you have benefited from the stock market boom or from real estate, you are probably concerned with capital gains taxes. If you need to sell your appreciated assets, consider donating them instead to the CSUS School of Engineering and Computer Science. You can eliminate capital gains taxes AND get a tax deduction for the higher current market value—avoiding high taxes and earning tax credits. In addition to real estate and securities, consider making gifts of art or jewelry. Your gift of appreciated assets will help support the School. You can even choose the program you wish to benefit: your former department, scholarships, educational equity, the dean’s fund, lab or computing equipment, etc. We will definitely appreciate you. For more information contact: Barbara Caretto, Director of Development, (916) 278-6629.
School of E&CS Honors Alumnus/HP Volunteer

Brian Dowling (BSEE '84), engineer at Hewlett-Packard’s Roseville Networks Division, got quite a surprise last May 22: A group of grateful students, faculty and staff gathered to honor his commitment to CSUS and to celebrate his positive impact on the Computer Engineering (CpE) program.

As an adjunct professor (and on HP job assignment), Dowling had spent Wednesdays on campus for four semesters, collaborating with CpE Prof. Ronald Becker in teaching key Verilog ASIC Design and Verilog ASIC Project courses. Dowling has also sponsored successful faculty equipment grant proposals to HP; arranged loans of advanced HP equipment; facilitated the acquisition of software site licenses; and helped students get jobs.

“The effect of your two years here will last a long time,” Becker said at the ceremony, adding, “This has been a win-win-win situation for [the School of E&CS], students, and the company.”

Dowling received a plaque which read: “In appreciation for the time and energy spent to bring Verilog ASIC design technology and equipment to the CSUS campus. Thanks from the faculty, staff and students.”

In their unique style of expressing gratitude, CpE students named a server “Dowwiser” for him.

Spring 1997 Commencement

In the above photo, Dean Braja Das chats with Dr. Kary B. Mullis, 1993 Nobel Prize recipient in Chemistry, prior to the E&CS commencement ceremony on May 24 at the Arco Arena.

In his address, Mullis advised new graduates to play, read outside of technical areas, have art and music in their lives, not neglect relationships, and keep the friends made at CSUS.

“Don’t forget who you are,” he cautioned. “Your degree is not a label that you can’t peel off . . . You don’t have to stick with a decision that you made as a kid.”

Quoting jazz musician Eubie Blake, Mullis added, “Be grateful for luck; pay the funder no mind; listen to the birds; and don’t hate nobody.”

Above all: “Take a path with heart.”

Project STARS students and mentors celebrate at their first annual awards banquet at the Discovery Museum on May 30. With funding from the Governor’s Office, Project STARS (Service To At-Risk Students) pairs struggling 7th, 8th and 9th graders from local middle and high schools with volunteer mentors recruited from local employers, educational institutions, and professional organizations. After training, mentors help students improve academic achievement, appreciate the value of education, recognize the preparation needed for future employment, and develop life management skills to achieve goals. (STARS Director Sally Leake invites additional mentors, and can be reached at 278-7877 or at leakes@ecs.csus.edu for information.)

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

JOAN AL-KAZILY (CE) was elected vice president of the newly-formed Capital Branch of the American Society of Civil Engineers; her term begins in October. Sheryl Bailey is president.


BARBARA CARETTO, E & C'S director of development, is leaving her position in December to return to Los Angeles.


CYNTHIA DESMOND (EEE) presented her invited paper, “Wafer Bonding for Nonelectronic Applications,” at the Fourth International Conference on Wafer Bonding, Science and Technology, Electrochemical Society Fall Meeting, Paris, Sept. 2-4. She also chaired the session on power electronics and coauthored four other papers presented at the conference.


LESTER H. GABRIEL (CE Emeritus) presented a seminar, "Material and Mechanical Properties of HDPE Drainage Pipes," at the Florida Atlantic University's Center for Marine Structures on April 2 in Boca Raton, FL.

ISAAC GHANSAH (CSc) received an equipment grant valued at $133,670 from Hewlett-Packard Co. (See story, page 1.) He spent the summer at the NASA Kennedy Space Center in Cape Canaveral, FL; as a second-year summer faculty research fellow, he developed a design document for integrating distributed directory services. He presented his paper (coauthored with Alivel Tangirala), "Comparison of Traffic Policing Mechanisms for Asynchronous Transfer Mode (ATM) Networks," at the 12th ISCA International Conference on Computers and Their Applications, March 1997, in Phoenix, AZ. (Former grad student Tangirala now works for Intel Corp.) He has received a grant of $7000 from Lockheed Martin for a research project, "Reliable Transparent Distributed Transaction-based System.”

JOHN M. GWYNN, JR. (CSc) presented "Double Hand Marquez: A Relative of Blackjack and Pai Gow," to the 10th International Conference on Gambling and Risk-Taking, Montreal, May 31- June 4; the paper will appear in the Proceedings. Gwynn was a session chair at the conference.

KENNETH D. KERRI (CE Emeritus) presented a paper, "New Collection System Training Videos," at the California Water Quality Association’s annual conference in Long Beach, CA on April 23. He was the keynote speaker at the Collection Systems Breakfast on April 24. Under a grant from the U.S. EPA, Kerri has developed six new training videos for the operators of wastewater collection systems; the CSUS Office of Water Programs will distribute them. The videos teach operators how to safely inspect and clean collection systems and also how to operate and maintain lift stations.

JAMES KHO (CSc) presented a paper, "Simulation of a Discrete Stochastic System Using a Parallel Computer," at the First World Congress on System Simulation, Sept. 1-4, Singapore. Kho received two fellowships which involve off-campus residence for extended periods. (See story, p. 3.)

MEILIU LU (CSc) published a CSUS Computer Science Technical Report (cs-tr97-1), "Protein Secondary Structure Prediction Using CS" (with Ken Lau, DUZHANG (CSc), and Li Lu). Her article, "Knowledge Discovery in Database," has been accepted for publication in Science (China). She has been awarded 3 units of assigned time in fall 1997 for a pedagogy enhancement project, "MS Thesis/Project Writing Guide.”


WARREN D. SMITH (EEE), BME Program Coordinator, chaired a special session, "Virtual Instrumentation in Biomedical Engineering," at the Virtual Instrumentation in Education Conference sponsored by National Instruments, Inc. and hosted by the departments of Integrative Biophysics and Physics, UC Berkeley, June 27. His presentation, "Virtual Instrumentation for Human Factors Studies in Surgery and Anesthesia" (with Drs. Ramon Berguer and Robert G. Loeb), which described their work with BME graduate students, took first place among 80 entries at an international contest (education category) sponsored by National Instruments, Applications of Virtual Instrumentation, at NIWeek 97: A World Without Barriers, Austin, TX, Aug. 19-21. (Among other contestants: MIT, UC Berkeley, Rice, Tufts.)

CUI ZHANG (CSc) had her paper, "A Formal Proof of Absence of Deadlock for Any Acyclic Network of PCI Buses" (with F. Corella and R. Shaw), published in the Proceedings of IFIP TC10 WG 10.5 International Conference on Hardware Description Languages and Their Applications, Toledo, Spain, April 20-25 (Chapman & Hall, pp. 134-156). She presented "Towards an Evolutionary Verification Methodology: Experience with a Distributed Programming Implementation" (CAROLE MCNAMEE (CSc), coauthor) at the International Conference on Parallel and Distributed Processing Techniques and Applications, Las Vegas, NV, June 30-July 3; the paper was published in the Proceedings. Her article, "Formal Verification of a Programming Logic for a Distributed Programming Language" (with R. A. Olsson and K. N. Levitt), has been accepted for publication by the Journal of Information Computer Science. Last June she presented "Verification of Distributed Computing Systems" in China as a guest speaker of the computer science department at Nanjing University, Nanjing, and at Fudan University, Shanghai. She was a member of the international program committee of the International Symposium on High Performance Computing Systems, Manitoba, Canada in July, and of the International Conference on Software Engineering, to be held in San Francisco in November.

DU ZHANG (CSc) has had three articles accepted for publication: "Knowledge Verification" (with J. J. P. Tsai, A. Sahay and E. Juan), in Wiley Encyclopedia of Electrical and Electronic Engineering; "Verification and Validation of Knowledge-Based Systems" (with W. T. Tsai and R. Vishnuswajal), in IEEE Transactions on Knowledge and Data Engineering; and "Implementing an Expert System to Analyze Phase-Array Antenna Range and Diagnostic Data" (with J. Friedel, V. Lee and R. Keyser), in Proceedings, 1997 AMTA Symposium, Boston (Nov. 1997).

WELCOME to new E & C'S full-time faculty members: Drs. Eugene E. Dammel and John R. Johnston, Civil Engineering Dept., and Drs. Behnam Arad and Te-Kai Liu (arrives spring semester) of the Computer Science Department; and to Teresa Gomez, new Computer Science Department secretary.

In memoriam . . .

Cliff Thompson, former part-time instructor in the ME Department, passed away on June 25. Described by Dean Das as a “good friend of our School for many years,” Thompson volunteered to help at School activities, including the 1995 E & C'S National Engineers Week Open House celebration for high school students.
Alumni Notes

Wayne D. Ash (BS/EE’79) is a distribution engineer for the Sierra Division of PG&E in Auburn, CA. He serves on the board of the E&CS BEST (Business Education Science Team) pre-college outreach program.

Francisco Caicedo H. (BSCE’81, MSCE’82) heads his own engineering and construction company, SDIC Ltda., in Bogota, Colombia.

Gary M. Carlton (MSCE’73) has been appointed executive officer for the State of California Regional Water Quality Control Board, Central Valley region. The regional board is responsible for protecting water quality in a 6,000-square-mile area. Carlton was president and CEO of McLaren/Hart Inc., a multinational environmental consulting business, before ending his 20-year career there last June.

Anthony M. Galvez (BSCE’91) joined SONOCO Products Co. as a plant engineer for its grocery sack manufacturing facility in Santa Maria, CA, after five years as a project/process engineer for Mobil Chemical in Bakersfield.

William E. Glaholt (BSCS’94) is the project manager of an Internet Web-based software development project for Caltrans.

The Department of Defense has named Ted Glum (BSCE’81) director of the Defense Microelectronics Activity at McClellan AFB, charged with providing advanced technology to all DoD services.

Eddie Haskins (BSCE’67) is public works director and city engineer for the City of Calistoga.

Laura Haughney (MSBME’96) has accepted a research position at the Harvard School of Public Health.

Barbara J. Hawkins (MSCE’95) is an assistant civil engineer at El Dorado County Department of Transportation in Placerville.

Richard C. Heidenreich (BSCE’71) directs R&D for Brother International Corp. in Bartlett, TN.

Ruth Hobbs (BSCE’81) is senior vice president of O’Brien Kreitzberg, a global professional services company of the Dames & Moore Group located in Los Angeles. Hobbs has over 20 years of experience in major public works construction projects, 10 of them with O’Brien Kreitzberg.

Ninh V. Loi (BSCE’81) is president of LTN Corp. in Glenn Dale, MD.

Navy Lt. Daniel McNair (BSME’84) received the Navy and Marine Corps commendation medal for outstanding performance while serving the Naval Facilities Engineering Command contracts at Camp Pendleton.

Rev. Thomas W. Perrin, SDS (BSCE’87) was ordained a Catholic priest as a member of the Society of the Divine Savior last May. He earned his master of divinity degree from the Franciscan School of Theology in Berkeley last year. He now serves as associate pastor and campus minister for St. Joseph’s Catholic Community in Huntsville, Alabama. The former civil engineer in transportation and underground utilities design recently wrote, “I enjoyed my work as a civil engineer and I enjoy my new work and life as well.”

Darrell Petray (BSCM’80) is Sacramento regional manager of Turner Construction Co., a New York City-based firm with an extensive local and national client list.

Michael E. Redman (BSEE’91) and Ying Sang Mun (BSEE’88) got married last year; both work at Pacific Bell in Pleasanton, CA. Redman received an MS in engineering from UCLA in 1992.

Azmam Salleh (BSCS’94) has returned to his native Malaysia, where he works as a systems specialist for the Mesiniaga Company, an IBM agent. He does pre/post sales support on AIX (IBM’s UNIX running on IBM Risc System 6000).

Peter Zaksom (BSCM’77) is chief estimator at MMC.

Besides Gary Carlton (see above), the CSUS Alumni Association honored Barry Johnson (BSCS’84), division manager at Logicon, and Russ Whipple (BSCM’80), district engineer at Teichert Construction Co. at its annual Alumni Honors Luncheon on Oct. 3.

One Professor’s Perspective

A DAY IN THE LIFE OF dr.ron: GHOST BUSTER

It’s 7:30 a.m. Tuesday and I begin to explain the complexities of logic synthesis to 33 computer engineering students using a design toolset from Synopsis. My day is three hours old by then, 40 minutes of which was spent making plans for the day while driving down from the foothills. Once past thinking about challenging assignments for my students, my attention turns to the force driving me for the last 25 years — Ghost Busting.

Actually, I’ve been at CSUS for 26 years. It took me one year to discover the Ghost. Practically anywhere I went, I noticed that anyone I spoke to about “Sac State” would say, “That’s nice” and stare off into space. I’d mention engineering at Sac State and they’d say, “What? Didn’t know there was such a thing.” The space they stared off into included other state universities (CSUs and UCs) and private universities — basically anywhere but here in Sacramento. Many people never actually visited these “better” universities, nor, in some cases, even knew where they were. Ghosts are like that.

Envious of the reputation of some of these well-known universities, I began a lifelong career of image-building for CSUS. Knowing that programs are judged on the quality of their graduates, I’ve focused many years on providing my students the best possible electrical engineering education. Many of the engineering students in the 1970s were re-entering and were highly motivated. They represented the School well and, when Hewlett-Packard moved to Roseville, things began to click. HP encouraged me to start a computer engineering program by providing over $1 million worth of equipment during the 1980s. Intel arrived in Folsom a few years later and slowly began hiring CSUS graduates. Today 240 of the 4000-plus employees at Intel Folsom are CSUS grads; CSUS

See Ghost Busting, page 11

Alumni Support E&CS Career Services

USCS has donated funds to purchase a computer for the E&CS Career Services Office, thanks to the efforts of alumnus Ragan Wilkinson (BSCS’87), software systems engineer. Mike Ellis (BSCS’83) of HP arranged the donation of a server for the JETS system. Director Cici Mattiuzzi, is grateful to these alumni for supporting the work of the Career Services Office.

Wilkinson presents the USCS check to Mattiuzzi in photo at right.

Career Services

ANNOUNCEMENTS OPPORTUNITIES
Ghost Busting
Continued from page 10
ranks 11th among universities in Intel's worldwide technical hiring and is the highest-ranked California university. CSUS has been in HP's top ten for several years; at one point about a year ago, only MIT, Stanford and Berkeley were ahead of CSUS. Ghost busting is fun!

I've observed that a big chunk of northern California has been reclaimed for CSUS. Local high school students today are well aware that CSUS has excellent engineering and computer science programs; if they choose to go elsewhere, it's likely because they need lots of miles from home and family, or because they simply want a campus near the ocean.

Ghost busting is something of a misnomer; I always give full recognition to universities with great engineering programs. My approach is a simple one: Do what they do, but do it better. The steady growth of the Computer Engineering (CpE) Program is illustrative. CpE began in 1985 at CSUS with 30 students, and swiftly gained accreditation in 1988. This fall CpE had the most entering students of any of the CSUS engineering programs. There are over 330 CpE majors.

With CpE thriving, I shifted my focus four years ago to recruiting the highest-quality high school graduates for the high-tech computer science, electrical and electronic engineering and computer engineering majors. Industry support has been excellent. A scholarship fund, known as GRAD_2000, was started in 1996 to attract exceptionally qualified high school seniors to CSUS. Thirty-four industry-funded scholarships, covering tuition and textbooks, have been awarded.

I'm conducting an aggressive recruiting campaign this fall for the CSc, EEE, and CpE programs. I use an e-mail address — dr.ron@csus.edu — that commands respect but invites a personal touch. My campaign to produce the best-prepared graduates of these programs begins by offering qualified students the opportunity to take an exciting logic design course (all designs programmed into PLDs and simulated with Logicworks) and a structured programming course (in C++) during their first semester. I enjoy teaching these classes and being a "mentor type" to these freshmen.

By 8:45 a.m. I've finished the lecture on Synopsys to the 33 juniors and seniors. They are temporarily overwhelmed with my expectations, but they will survive and thrive. It's a double victory because I know that with this education they will be eagerly sought out by local industry and, if they choose to move to the Bay Area, they will receive many, many job offers — some from Synopsys. At last count, Synopsys identified CSUS as one of five schools from which it recruits.

Ghost busting again? Well . . . maybe a little for old time's sake.

Ed. note: dr.ron invites alumni with their own children, or their neighbor's children, "or whoever," to contact him at his e-mail address, visit the Website at www.ecs.csus.edu, or visit him at CSUS (278-6844).

Make News! What are you doing now? 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!

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First ____________________ Last ____________________ (Maiden)

Name while attending CSUS, if different ___________________________

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Comments: __________________________________________

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The CSUS Alumni Office will contact you.

Check your membership category:
☐ $20 Recent Graduate* ☐ $45 Joint Spouse ☐ $180 5-Year Spouse
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☐ $140 5-Year Individual

* For those who have graduated from CSUS within the past 12 months.

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

Please send correspondence and/or membership dues to:
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**Festivities**  
*Continued from front page*

ME emeritus; and a graduate from the first class of engineers (1958). The work of current students and faculty from each department will be on display during the event; alumni who have a project or work that they would like to have featured can contact Dr. Joan Al-Kazily, CE Department chair and coordinator of E&CS 50th anniversary festivities: (916) 278-7346 or alkazily@ecs.csus.edu.

The final event is a colloquium, “The Future in Engineering and Computer Science,” presented in the Multimedia Theater (Library 11) on November 19, from 5:00-7:00 p.m. An impressive roster of experts will discuss their visions of present trends and future developments in selected areas of engineering and computer science: Troy Allison (Intel), computer technologies; Prof. Jean-Pierre Bayard (E&CS EEE Dept.), instructional technologies; Kenneth Butler (Nimbus Corp.), artificial hearts; Deena Morgan (GenCorp Aerojet), aerospace technologies; and Randy Woolley (CalTrans), intelligent vehicles.

Admission is free to both the showcase and the colloquium. Day parking permits can be obtained from coin-operated vending machines for $1.75; or readers can phone 278-6366 or 278-6127 to receive a complimentary parking permit if notice is sufficient.

Questions about these events can be directed to Dr. Al-Kazily at (916) 278-7346 or alkazily@ecs.csus.edu.