CSUS Sees Second Big Enrollment Jump in Two Years

Fall semester began with an estimated 1,000 more students than last year, including a wave of new freshmen. The University has also welcomed its first doctorate student.

University officials said enrollment reached more than 25,530 this year. First-time freshmen enrollment is about 2,175, more than 18 percent larger than last year's record-size class. The number of students transferring to CSUS also increased, particularly junior-level transfers from community colleges. In addition, new graduate student enrollment is up more than 5 percent and international student enrollment more than 19 percent.

The highest CSUS enrollment so far was 26,339 in 1990. Enrollment leveled off to generally between 22,000 and 24,000 for most of the last decade. Like this year, last year's enrollment of 24,530 was an increase of about 1,000 students.

CSUS anticipated the big enrollment jumps of the last couple years, and in an effort to maintain its historic commitment of access for California students, is planning for strong enrollment growth to continue for many years to come.

To help meet demand, a new five-story classroom building — Mariposa Hall — has opened this semester. The University Union was expanded with 100,000 square-feet just two years ago, and a series of projects are planned for the next three years — including a 100,000 square-foot tech-oriented addition to the University Library, student apartments, a Regional and Continuing Education building, a CSUS Foundation research and public service complex, a Lake Natoma Aquatic Center instructional facility, and a parking structure. A number of site options are being considered for a planned 1,300-seat performing arts venue.

In addition, the University is increasing its distance education and off-campus offerings. This semester, 85 distance education courses are being offered, with 44 of them online.

Enrollment at CSUS is expected to continue growing quickly in coming years, reaching as many as 32,000 students by 2010.

New Academic Provost Named at CSUS

In August, Bernice Bass de Martinez became provost and vice president for academic affairs. Bass de Martinez's appointment is the result of a national search for a replacement since the past provost, Jolene Koester, was tapped as the president of CSU Northridge.

The new CSUS provost has been the senior associate vice president for academic affairs and dean of the School of Graduate Studies at Indiana State University in Terre Haute, Indiana, since 1996. She was also the associate provost and director of graduate studies at Mills College in Oakland, California, from 1993 to 1996, and before that served as dean of the College of Education and Human Services at Seton Hall University in South Orange, N.J.

Bass de Martinez earned her doctorate degree in curriculum and instruction with emphases in bilingual multicultural education, reading and language arts, and teacher training from the University of Florida. She has a master's degree in elementary education with emphases in reading and bilingual education from the University of Northern Colorado and a bachelor's degree in Spanish and chemistry from the University of Northern Colorado.

She has extensive background as an educational specialist both in the U.S. and abroad. She has been a liaison to the Indiana Commission on Higher Education on curricular issues and has been very active as the coordinator of the Indiana ACE National Network of Women Leaders. She also serves on the Board of Leadership America. She has more than 15 years of accreditation experience.

Her area of scholarship centers on the policy aspects of teacher preparation. Along with the provost position she simultaneously accepted an appointment as a professor in the department of teacher education at CSUS.

CSUS Administrator Named President of DeVry Institute in Fremont

James Kho, associate vice president for administration and a professor of computer science at CSUS, has been appointed president of the DeVry Institute of Technology in Fremont. He began on July 10.

The DeVry Institute is a nationwide group of accredited college-level programs, granting degrees primarily in technology and business related fields. The institute in Fremont, the first in Northern California, is relatively new.

Kho joined the CSUS faculty in 1973. He later served as chair of the computer science department and then associate dean of the College of Engineering and Computer Science, before being appointed associate vice president.
The Engineering Scholarship of CSUS

The Engineering Scholarship Endowment of CSUS is one of the College’s critical components in the effort to attract outstanding students, provide for a quality education, and make financial support possible.

Established in 1999 through the efforts of Civil Engineering emeritus faculty William Neuman and his wife Anna Rita Neuman, and Naomi Kabakov, the widow of the first dean, the interest this fund earns will finance full-tuition scholarships to students in fields of engineering.

Through the generosity of current and emeriti faculty members, this fund has reached a level of endowment where a scholarship award can be made. The first Engineering Scholarship of CSUS will be awarded for the Fall 2001 semester, and as the endowment of this fund increases through gifts, the number of scholarships that can be awarded each year will increase as well.

Faculty members and members of the ECS family, such as the Neumans, Professor Lester and Lillian Gabriel, and Mrs. Kabakov, have joined together to form a volunteer community to cultivate support for this important scholarship.

An event at the newly refurbished Julia Morgan House is planned for this spring. Please keep your eye out for an invitation in February, and plan on joining us in late March to view this example of excellent architecture, and to support the engineers of the future through scholarship assistance.

New Training Targets Costly Computer Failures

Taking aim at computer failures that have cost business and government millions of dollars, CSUS has begun intensive new training for seasoned technology professionals.

The Professional Development Program focuses on strategies for managing groups of software developers, cost and scheduling, quality assurance and related issues. It’s designed to help managers avoid snafus such as the $100 million child support system California was forced to abandon in 1997.

It is one of just five such programs established this year in partnership with the Institute for Electrical and Electronic Engineering Computer Society (IEEE-CS). Others are at the New Jersey Institute of Technology, Southern Polytechnic State University in Georgia, the Oregon Graduate Institute of Science and Technology, and the University of Strathclyde in Scotland.

The program was a good fit at CSUS because of the interest of a number of faculty members in developing software engineering standards. In addition, many CSUS graduate students have worked with the IEEE-CS on software engineering standards and other software engineering management issues. ECS alumni Barry Johnson is working with Don Warner, chair of the Computer Science Department, and various faculty members to make this program possible.

Synopsis Grant Builds on University’s High-Tech Prowess

CSUS Engineering students have gained increased access to the latest generation of circuit design software, thanks to a grant of software from Synopsys. The grant includes licenses for Design Compiler, COSSAP and FPGA Express. This is the fifth year in a row Synopsys has made a software license grant to CSUS, one of the few universities chosen to receive the licenses at no cost.

Sunnyvale-based Synopsys is one of the world’s top makers of electronic design automation software. Its Design Compiler and FPGA software is used to design integrated circuits, the electronic devices found in everything from microwaves to IMAX theaters. COSSAP is used in designing digital filters such as those found in digital cellular phones.

“The company is impressed with our reputation and our hands-on approach to teaching,” says Ron Becker, coordinator of the CSUS computer engineering program. “In addition to providing these grants, it has joined companies like Hewlett-Packard and Intel in employing large numbers of our graduates.”

Synopsys is one of a number software packages CSUS uses to teach integrated circuit design. In fact, while some universities boast of packages from one or two companies, CSUS uses nearly every major package — Synopsys, Cadence, Altera, Xilinx, Cypress and Lattice. The advanced courses these tools make possible, in part, led U.S. News and World Report to rank the College of Engineering and Computer Science 26th among engineering programs focused on undergraduate education.
Homecoming 2000 mushroomed into more than an annual celebration of the University's alumni and one of the biggest football games of the year. This year, the weekend grew into a whole week of special events, beginning October 8. These events helped serve as an official campus welcome for the new Steven Lee Yamshon Alumni Center that opened this summer.

A “Fun Run” began the festivities and ended with a pre-game “Octoberfest” party and homecoming football game on Oct. 14. In between there were academic forums, the annual Honor's Luncheon, the official Alumni Center opening, and an Alumni Association 50th anniversary party. There was also a series of student “Spirit Week” events, including a campus dance, a bonfire the night before the homecoming game and a tug-of-war tournament that concluded during halftime of the game.

The pre-game party at the new Alumni Center featured a tent village hosted by the individual Colleges, a German-style band, “Octoberfest” food, and an appearance by the CSUS Marching Band. The ECS Tent exhibited the Student Chapter of the Society of Automotive Engineers' 2001 Formula SAE Racer and information about College Programs. The homecoming football game ended with a 24-13 victory over Montana State. This was the second Big Sky conference win for the Hornets.

For more information about Alumni Society membership and future events, please contact the CSUS office of alumni relations at (916) 278-6295.

HP Energizes Lab With Innovative New Server

Hewlett-Packard has overhauled the CSUS Advanced Workstation Lab with the donation of an N-Class Unix computer server and 14 advanced Unix workstations.

About 200 students from the CSUS College of Engineering and Computer Science use the lab each year for class projects. The equipment grant, valued at $173,000, was made possible through the efforts of CSUS computer science professor Behnam Arad.

With the new equipment, students will get hands-on experience with the latest software for designing integrated circuits and microprocessors, and for studying computer design and organization projects that require high-end servers and workstations using the Unix operating system.

The $50,000 N-Class server is HP's latest mid-range server. It was developed for both computer design applications and business functions such as e-commerce, and has been highly praised since its introduction last April. It can be expanded with additional processors, which CSUS plans to do in coming years.

CSUS has a long and mutually beneficial partnership with HP dating back more than two decades. Last semester, for instance, the company donated 16 advanced workstations worth $200,000. In addition to direct equipment donations and support, HP periodically provides employees to teach part-time at the University, and hires large numbers of CSUS graduates.
Move Over Type A: Techno-Personalities Drive Behavior in the Digital Age

Look around any workplace and you’ll see them — resisters, impostors, dreamers. The dizzying pace of new technology has spawned a whole range of techno-personality styles, says Francine Toder, Psychological Counseling Services psychologist at CSUS.

Toder has identified the “Top Ten Computer Neuroses,” different types of people who will react differently to technology. The personalities are the focus of a book in progress.

“One person’s response to technology might be to push toward it,” Toder says. “Another’s might be to run away from it. Yet another might think, ‘The government is trying to get us.’” She points out that many people will not fit one of these personalities, because they only describe those who have a mal-adaptive relationship with technology. But recognizing a co-worker in one of the “Top Ten” styles may indicate how that person might best be understood and motivated in our increasingly technological society.

As those most closely involved with technology, engineers and computer scientists may well benefit from knowing how technology can be perceived and approached by others.

Toder’s “Top Ten” technology personalities are:

The Technophobe – Like the name implies, technophobes have a strong fear of technology. They might be otherwise forward-thinking, proactive people, but like a person who is afraid of snakes, they can be paralyzed by technology.

The Resister – This is the most common style. “When you meet someone who fits this profile, you know who they are by the energy it takes to convince them to try something new,” says Toder. “Resisters aren’t afraid of technology; they dislike newness and prefer the simplicity of a technology-free life.”

The Challenger – Challengers are similar to Resistors with added anger, hostility, resentment and/or acting-out behavior. They may be anti-technology or show signs of paranoia. They can actually be destructive, like the Unabomber, or use technology in ways that are harmful, such as committing cybercrime. Toder says this reaction is not uncommon when people get up to speed technologically and then don’t get support from management with hardware, software or other technology.

The Hermit – These people isolate themselves and avoid face-to-face contact: They may have strong technical skills but weak people skills. They embrace technology but have difficulty communicating with others about it.

The Addict – Addicts can’t stop. They have a myopic approach to life — eating, sleeping and breathing technology while ignoring other aspects of work and non-work life. “They have a whole subculture, living cyberlives, which they find preferable and more satisfying than other ways of being in the world,” Toder says. Addictions take two forms: mind-numbing activities like playing video games and checking stock quotes, and mind-expanding activities such as web surfing.

The Driver – These “technomaniaics” are similar to addicts but with manic energy directed toward outpacing competitors and keeping their cutting edge. Drivers are extroverts who love the attention, appreciation and adoration of others.

The Procrastinator – Hidden fear of failure causes this type to avoid doing what needs to be done. Instead, they use technology for less relevant tasks that are easier and more satisfying. Unlike the technophobe, the Procrastinator feels competent using technology and uses it to mask feelings of incompetence in other parts of life.

The Impostor – This type feels like a fake so they make big shows of playing around on the computer hoping to avoid being found out. They spend more time covering deficits than doing their job, which interferes with work relationships and further erodes self-esteem.

The Player – These are grown-up “gamers” who distract themselves by playing when things get heavy, scary or difficult. On the job, web surfing, chat rooms and ongoing e-mail conversations may often be the most satisfying parts of their workday. They are only interested in technology as a way to advance their play.

The Dreamer – Dreamers have unrealistic expectations about the role of technology. They feel cheated when their grandiose ideas about technology fall short of reality. Dreamers may have a general pattern of wishful thinking, distorted perceptions of what is possible, or a tendency to exaggerate.
McClellan Lab to Loan CSUS
$1 million in High-Tech Equipment

CSUS students will benefit from the ongoing conversion of McClellan Air Force Base, gaining access to some of the most advanced optical and integrated circuit technology available through a new partnership with the U.S. Department of Defense's Defense Microelectronics Activity (DMEA) Laboratory located at McClellan Air Force Base in Sacramento.

DMEA is a federal engineering laboratory that will remain at McClellan after the base closes in July 2001. It was established to help the Department of Defense stay current in microelectronics technology.

The Federal Technology Center, working as DMEA's partnership intermediary, helped establish the agreement. The equipment loaned included a laser unit designed to carry out microscopic work on optical fibers, a fiber optic systems and clean room equipment that students can use to make and test integrated circuits. The equipment was loaned through an educational partnership agreement between the University and DMEA that allows for long-term collaboration between the organizations. The partnership agreement can also allow CSUS students and faculty to carry out research and use other equipment at the DMEA facilities.

To kick off the new partnership, DMEA officials presented CSUS with a long-term loan of $1 million worth of equipment at a Base ceremony in April.

TurboLinux Makes a Powerful Donation to Computer Science

TurboLinux Inc. has begun a relationship with the College of Engineering and Computer Science with the gift of an IBM Netfinity Server with TurboLinux's Server 6.0 software installed on the machine.

This substantial technology gift to the Department of Computer Science will be used primarily for the course, “Introduction to System Programming,” and as a web server to maintain and enhance student access to course materials.

TurboLinux Inc., founded in 1992, is the leader in high-performance Linux, designed to meet the needs of the Internet and e-commerce through clustering solutions.

TurboLinux is based in San Francisco with offices in Australia, Brazil, China, Germany, Hong Kong, Japan, Slovenia, South Korea and the United Kingdom.

The TurboLinux server and the associated materials are valued near $4,400. CSU Sacramento is only the second school that TurboLinux has chosen for a charitable donation. MIT was the first.

Intel Adds Power to Advanced Computer Lab

Intel has once again made a substantial technology gift to the College of Engineering and Computer Science, this time giving a dozen high-end workstations for the Computer Engineering Design Lab.

The computers will be used by students learning to design and build computer circuitry, and by students working on senior projects. Each computer is capable of running both Windows NT and UNIX operating systems, giving users access to both standard desktop applications and the specialized engineering software the Design Lab is known for.

The Intel equipment grant is worth more than $40,000, almost double what Ron Becker, Program Coordinator for Computer Engineering, had initially requested. Intel has long been a supporter of the College's programs. Among its numerous gifts in recent years was a $340,000 computer lab, which the company keeps constantly up-to-date, and an important scholarship program for entering students.
Madeleine Fish Named Outstanding MEP Director

Madeleine Fish says she enjoys being around successful people and it shows. Each year she helps inspire more MESA Engineering Program (MEP) students toward graduation and career success. Her ability to promote and enthuse others toward their goals has netted her even more success. She was recently awarded the honor of MEP Director of the Year for 1999. Fish's MEP director peers nominated her for the award.

"This is wonderful," she said of receiving the honor. She is modest about her achievements, but has strong affection for the work she does. She describes herself as persistent and tenacious when it comes to fighting for the success of her 460 MEP students.

"I do take it personally," she said. "I'm in the kind of situation where I get to know the students. I treat them as I'd want a teacher to treat my children." Lucy Casale, assistant director of MESA's undergraduate programs, agrees with Fish's self-assessment. "Madeleine is one of the strongest student advocates I know," she said. "She is highly respected by her colleagues in MEP and throughout the MESA organization."

"It's about one student at a time," Fish said. "When you've been in this field, and almost 35 years in this one community, you know that there are students who could have gotten stuck along their road to and dropped out. For someone to tell me that I was there to make a difference in their lives is wonderful."

Fish, a Manhattan, New York native, said she grew up in very impersonal schools. She came to California in 1969 when her husband, Richard Fish, a chemistry professor, accepted a job at the university. Madeleine Fish, who has a master's degree in chemistry, taught chemistry, physics and computers at Grant Union High School in Sacramento for 22 years before coming to CSU Sacramento. For 10 of her 22 years at Grant Union she worked with the MESA program.

John Miles Retires as Chair of Computer Science Department

John Miles, Professor of Computer Science, and Chair of the Department since 1998, retired June 2. Miles had been at CSUS for 30 years. He was celebrated at a retirement party hosted by the College in May where he announced a challenge gift to the faculty of the College, pledging up to $1,000 to the new Computer Science Department Scholarship Endowment as a match for any faculty gift to the any College account. Miles helped establish this account just before he retired.

At a separate departmental retirement party at Sacramento's Sloughhouse Inn, members of the faculty and staff roasted Miles with gifts, anecdotes, and a song, especially composed by CSC Professor, Dwight Freund. Miles plans to motorcycle across Australia.

The new chair of the department is Don Warner, a professor of computer science since 1978.

Retired Professor Endows Scholarship

Retired part-time faculty member in the Department of Electrical and Electronic Engineering, James C. Hathaway, has generously endowed a scholarship fund to support the educational endeavors of students in that Department.

With an endowment of $50,000, this important scholarship fund will support one EEE student each year with tuition, fees, and a book stipend.

Professor Hathaway indicated that the scholarship is an expression of his appreciation for the benefits of his past association with CSUS and of his hope for the careers of future students. He hopes that his scholarship will serve to make it possible for countless future students to pursue an education and realize their goals in the areas of electrical and electronic engineering. The first James C. Hathaway Scholarship will be award in Fall 2001.

* Taken from the MESA News. Download article from http://www.mesa.ucop.edu/whatsnew/directorofyear_20000814.html
Castles, Ruins and Bond Graphs
Jose Granda spent the past year on sabbatical as a guest professor of Mechatronics at the University of Applied Sciences Bonn-Rhein-Sieg in Sankt Augustin doing what he knows best, the creation of Computer Models for Simulation with the modeling software developed by him — CAMP-G (Computer Aided Modeling Program).

Granda is an internationally-recognized researcher in the area of modeling and simulation of Dynamic Systems with help from Bond Graphs, which generate automatically complex computer models with the corresponding software. This allows engineers from the most diverse sciences to communicate with the same simulation language.

Granda has had contact with Wolfgang Borutzky at the University of Applied Sciences. Professor Borutzky focuses on the area of Mechatronic studies. Mechatronics is a multidisciplinary area which connects electrical engineering, mechanical engineering, and computer science with one another.

Through Borutzky and with the help of the German Academic Exchange Service, Granda found a way to spend his sabbatical at the University of Applied Sciences and afterward at Stuttgart in the department at Daimler Benz (Daimler Chrysler), where he was invited to give a lecture over the advantages and benefits of the bond graph method for the automobile development industry.

“We are happy to have had Professor Granda with us and happy that this topic occupies a prominent place in the design process," said university president Dr. Wulf Fischer. "In this way the students at the University of Applied Sciences in Bonn-Rhein-Sieg will be well prepared when they face a job in this industry."

He finished his sabbatical in August and returned to Sacramento and CSUS for the fall semester, leaving behind enthusiastic students, inspired colleagues, and his software, which is now implemented into the University’s teaching program.

Outstanding Teacher, Researcher, and Staff Awards Presented
Each Spring, the College of Engineering and Computer Science presents awards that honor and recognize the achievement, dedication, and talents of an Outstanding Teacher, an Outstanding Scholar, and an Outstanding Staff member. This year, the award ceremony recognized Preetham Kumar, Professor of Electrical and Electronic Engineering, as the Outstanding Teacher of the year. Professor Kumar was also recognized in a University-wide reception for Outstanding Faculty from each of the seven Colleges.

The Outstanding Scholar this year was Cui Zhang, Professor of Computer Science, in recognition of her scholarly publications. The Outstanding Staff member this year was Gail Peters, Assistant to the Dean, in recognition of her years of service to the Dean.

All the recipients were recognized at the reception and each was presented with a plaque by Dean Das. They will also be listed on perpetual plaques displayed in the foyer of Riverside Hall.

Past Outstanding Faculty, Staff, and Scholar Award recipients from Engineering and Computer Science include:

**Outstanding Faculty**
Fred Reardon (ME) .......................... 1998-1999
Jean-Pierre Bayard (EEE) ................ 1997-1998
Turan Gonen (EEE) ........................ 1996-1997
John Gwynn, Jr. (CSC) .................... 1995-1996
Kenneth Kerri (CE) ...................... 1994-1995
John L. Clevenger (CSC) ............... 1993-1994
S.K. Ramesh (EEE) ........................ 1992-1993

**Outstanding Scholar**
Warren Smith (EEE) ....................... 1998-1999
Francois Cheong-Siat-Moy (CE) ........ 1997-1998
John Balachandra (EEE) ............... 1995-1996
Du Zhang (CSC) .......................... 1996-1997

**Outstanding Staff**
Cici Mattiuzzi .............................. 1999
Shelly Hedberg ............................ 1998
Bruce Scott ............................... 1997
Barbara Dietrich .......................... 1996
Gwen Smith ............................... 1995
Faculty and Staff News and Publications


John Balachandra, Professor of Electrical and Electronic Engineering, presented a paper, "Impact of Distributed Generators on the Control Center Monitoring and Network Based-Technology to Facilitate Expanded Use of Distributed Energy," with S. Balachandra and A. Kilmez, at the DRPT 2000 International Conference in London.

Jean-Pierre R. Bayard, Professor of Electrical & Electronic Engineering, participated in the NRC workshop on IT in undergraduate teaching and learning hosted by the National Research Council June 20-21, 2000, at the National Academy of Sciences in Washington, DC. The workshop focused on the role of information technology in improving the teaching and learning of undergraduates. Workshop discussions will result in a Proceedings report from the NRC, and will also contribute to the planning of additional studies on the role of information technology in education by the National Research Council (NRC).

Keith Bisharat, Professor and Program Coordinator of Construction Management, was the 1999/2000 recipient of the Bautzer Faculty Award. The Bautzer Award is presented by the CSU Chancellor's Office to faculty members who participate and show an interest in support of the development process within their College. Bisharat was nominated based on his willing participation in fund-development for the Construction Management Program, and his interest in gaining more knowledge of the development process to make further participation possible.

John Clevenger, Professor of Computer Science, was selected to receive the "Measures Award" from the ACM International Collegiate Programming Contest (ICPC). This award is given once a year to one volunteer from the international community who has made significant contributions to the ICPC. It included a $1000 grant, plus travel expenses and a week's stay for Professor Clevenger and his family in Orlando, FL. Professor Clevenger was selected for this award for the work he has done for the Contest over the years, especially in the development of the PCA2 software used to run the contest.

Cynthia Desmond-Colinge, Professor of Electrical and Electronic Engineering, presented "Comparison of Large Area Power Devices Fabricated by Wafer Bonding," with Getachew Ayelle, at the Fifth International Symposium on Semiconductor Wafer Bonding Science in Hawaii. Desmond-Colinge also presented results from a DARPA/EPRI joint project on two occasions. There were approximately ten teams in the U.S. funded under this program. Team members on the CSUS project included representatives from Virginia Polytechnic Institute, Stanford Research Institute, University of Southern California, Clemson University, and Silicon Power Corporation.


Jose J. Granda, Professor of Mechanical Engineering, presented a research paper, "Modeling Methods for Nonlinear Discontinuities using Computer Generated Models," at the Ecole Central de Lille in France; and a paper, "The Role of Bond Graph Modeling and Simulation in Mechatronics Systems," at the Mechatronics 2000 Conference in Atlanta, GA.


Mahlon Heller, Professor of Electrical and Electronic Engineering, completed work on the Autonomous Shadow Vehicle (ASV) project this summer. The ASV (featured in the 1999 ECS newsletter) is a driverless, computer-driven vehicle for use in protecting highway workers during highway maintenance operations. The project, completed in part by a dedicated team of students, was demonstrated in June on the runway at McClellan AFB. Heller also published "Mobile Robots and Interdisciplinary Design, MOBOTS," in Computers in Education Journal.

John Hester, former Associate Dean and emeriti faculty member of Mechanical Engineering, is vice president of Engineering and R&D for Clean Custom Fuels, Inc., whose focus is synthetic fuels for improving environmental quality. He is also completing his final term as a board member for WAVE (Women Escaping a Violent Environment), Sacramento County's domestic violence and sexual assault agency. During his 17-year tenure, he served three terms as board president, and most recently directed an 18-month effort that resulted in the development of a strategic plan for the first decade of the 21st century. He has just been selected to the Board of Trustees for his alma mater, Tri-State University in Angola, IN. He graduated from Tri-State in 1958 and in 1999 received their Outstanding Achievement Award.


(continued next page)
Alumni News

Star Light, Star Bright

This coming Spring, the alumni chapter of the College is planning a "Star Party," in conjunction with the Sacramento Valley Astronomical Society, among whose members many ECS alumni, faculty and staff.

The event will take place on a Saturday in April (based on the lunar calendar). You will be receiving invitations and information about date, time, and location for this event closer to the time. Watch the skies — and your mailbox!

29 Alumni Honored During Homecoming Week

Twenty-nine alumni were recognized at the annual Alumni Honors Lunch held during Homecoming Week at the new Steven Lee Yamshon Alumni Center. Awardees included ECS alumni Saited Ansari, electrical engineering; Steve Fischer, computer engineering; Carmelinda Mog, computer science; Steve Macaulay, civil engineering; and Scott Maxwell, construction management. Honorees were chosen by the different academic departments on campus for their achievements and outreach efforts in their fields.
Alumni News / Notes

James Bonaly, BS'80, ME, is a development manager at ABC, a software development firm, in Sacramento.

Gary Bruins, BS'98, CSC, is currently in his final year of graduate school at Texas A & M in a program that emphasizes computer science and traditional and technology-based art education.

Timothy Crandal, BS'86, CE, has been appointed manager of the Sacramento engineering group of Kleinfelder, Inc. He will coordinate and manage personnel and resources for environmental engineering and remediation projects throughout northern California.

Willie R. Cooper, BS'92, CSC, is CEO of Online Database Systems, Inc., in Carrollton, Texas.

D. Allen Crosby, MS'98, ME, is with Aircon Energy and the owner of Crosby ETS, a mechanical engineering firm in Sacramento.

Dennis Davis, BS'66, CE, has retired from the Corps of Engineers and now owns Davis and Associates, an engineering consulting firm.

Antonio Manuel Dee, BS'91, EEE, completed his MBA at the Asian Institute of Management, and is pursuing certification as a Microsoft Certified Systems Engineer (MCSE), as well as Novell and Cisco certification in the Philippines.

Tina Deiser, BS'99, ME, is a Manufacturing Development Engineer at Hewlett Packard in Boise, Idaho.

David Dovichi, BS'86, CM, is project manager at DPR Construction.

James Fischer, Jr., BS'89, MET, is Public Outreach Officer for the California Environmental Protection Agency's Air Resources Board.

Dara Fong, BS'95, CSC, is a Database/Web Developer for Tiedi Corporation in Roseville, CA.

Jeffery Hodges, BS'79, CpE, is a software engineer for Stanford University.

Butch Hodgkins, BS'72, CE, is the executive director of the Sacramento Area Flood Control Agency.

John Larson, MS'92, ME, received the 1999 Education Award from the Society of Manufacturing Engineers at the SME annual awards banquet held in St. Louis. Larson is a San Joaquin Delta College instructor and was honored for his excellence in training students for careers in design, manufacturing, drafting, and CAD/CAM.

Jeffrey Lewis, BS'86, EEE, is Department Manager at Logicon in Sacramento.

Allen Little, BS'99, EEE, is Firmware Engineer at Motorola Worldwide, in the Smartcard Solutions Division in San Jose, CA.

Rick Little, BS'99, CE, is a civil engineer at Shingle Springs-based Carlton Engineering, Inc.

John Liukkonen, BS'91 ME, is employed by Dreyer's Grand Ice Cream as technical operations manager for its southwest operations center.

Patrick Maher, Jr., BS'85 ME, MA'97, is an engineering project manager for the space and communications systems at McClellan Air Force Base.

Server Mirsan, BS'80, ME, is Managing Director at Vangard, LTD in Istanbul, Turkey.

Michael Musti, BS'93, CE, is project manager at Vail Engineering.

Thad Puzdrakiewicz, BS'93, CM, is project engineer at Rex Moore Electrical Contractors and Engineers.

Michael Ranker, BS'69, CE, is the new senior projects manager at Sandis Humber Jones in Salinas, CA.

Craig Rossi, BS'87, CM, is estimating manager with Performance Contracting, Inc., where he has been employed since 1987.

Kamil Sigowide, BS'98, MET, is a development engineer at Dames & Moore.

Don Simpson, BS'89, CSC, is Database Administrator at Alldata in Elk Grove, CA.

James Snow, BS'73, CE, is assistant to the general manager on water policy for Wetlands Water District. Snow is responsible for the programmatic, technical, and policy level responsible on district water supply issues.

Judith Speights, BS'86, CSC, is project/software engineering at Hewlett Packard in Roseville. She was previously worked with the CA Department of Corrections.

Larry Wing, MS'81, CE, is roadway section manager for the Sacramento office of HDR Engineering, Inc., a national engineering firm. Wing is responsible for nearly $3.5 million in transportation projects.

Please use the enclosed envelope to submit your information for the Alumni News Notes section of the ECS newsletter.

Issues of Emissions from Gasoline Cargo Tanks

A Report from Alumnus Joe Fischer, BS'00, CE

Last year in California, nearly 14 billion gallons of gasoline were hauled by 4500 cargo tanks operating in the State. The potential for fugitive emissions is alarming. VOCs in the lower atmosphere combine with sunlight to produce low level atmospheric smog and undesirable health affects.

A test was conducted with an experimental test kit to measure VOCs escaping from tanks while driving down the highway. Prior to this study, no other test had been conducted. Air Resources Board procedures only test trucks while parked. The experiment was a success.

It was discovered that cargo tanks operate under a negative pressure while traveling down the highway and are only positive while stopped for a period of time. Positive pressure can escape through cracks or openings and vent to atmosphere. Negative pressure was due to cool gasoline being loaded into a warm cargo tank shell.

The final emission figure is still only estimation at this time. Additional testing will continue throughout the year and possibly into 2001. The estimation at the present time is 630.1 tons VOC's per year or, about 2 tons per day.
NEWSLETTER for Alumni of the College of Engineering and Computer Science

ECS Donor Societies Welcome 2000 Members

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RACING AWAY with the Formula SAE Car

The Society of Automotive Engineers (SAE) at CSU Sacramento is a group with speedy ideas! The team is in the process of building a formula-style racecar, called a Formula SAE Car, with the intent of taking the car to Pontiac, Michigan in May 2001 for an international design competition. Sponsored by Ford, Daimler Chrysler, GM, and the Society of Automotive Engineers, the competition attracts entries from over 120 colleges and universities from around the world. To compete the students must conceive, design, and manufacture an open-wheeled, formula-style racecar. Restrictions are put on the design of the engine and frame, and cost of production, in order to challenge the students' knowledge, creativity, and imagination.

The event gives students the chance to build-up their engineering, hands-on, and team skills that in turn will give them the edge they need to succeed in the highly-competitive and demanding field of engineering.

The CSU Sacramento team is well on their way. They have designed and fabricated a tubular space frame, a formula-one style, inboard suspension system, a front and rear independent hydraulic braking system, and a unique drive train.

They are currently in the process of taking a 1993 Kawasaki ZX-6, 4-cylinder motorcycle engine, donated by Sac Cycle

Salvage of Rancho Cordova, and rebuilding it from the ground up. The team also developed a new fuel injection system that will replace the ZX-6’s four carburetors.

Future plans are to get the engine completed and mounted on a student-made dyno that will allow them to bench test and prove the validity of their design. The team is in the process of designing a fuel system, cooling system, electrical system, and all necessary controls needed for operation. This part of the project should be completed by the end of November 2000. The team will then go through the long process of testing and re-designing the car for peak performance and reliability.

This will occupy them during the winter and early spring. Once the team is confident that the car is ready for competition, a student-designed and fabricated body will be fitted to the car, and the team will set forth for Pontiac.

While work has begun on the 2001 Car, the team still has a long way to go in order to finish design, complete construction, and begin testing, and racing the car. An important part of this process will be to identify corporate sponsors and individual donors who can help the team meet their budget demands. If you, or your place of business, are interested in supporting this team, please contract the ECS Development Office at (916) 278-6629. Such support is tax-deductible, and will go a long way toward helping make this project successful.

Civil Engineering Students Compete Locally and Nationally

The MidPac Conference for the Civil Engineering Student Chapters of ASCC held the 2000 Steel Bridge and Concrete Canoe Competitions May 20-21, 2000. Students from ECS participated in both areas.

The Concrete Canoe Team took third place in the MidPac Conference competition (UC Davis took first place). The ECS Steel Bridge Team took second place, and joined the first place team (CSU Chico) at the National Competition at Texas A&M. The team, who designed and fabricated their bridge without any assistance, took first place in the national competition in the stiffness category. They received 18th place overall.
New Scholarships Provide Tuition, Co-op Jobs

More than 50 engineering and computer science students each semester will receive tuition and paid work experience through a new scholarship program.

The scholarships are funded with a two-year, $220,000 grant from the National Science Foundation’s Computer Science, Engineering, and Mathematics Scholarships Program. Recipients will be low-income students in their final two years of undergraduate study.

Each student will receive about $2,000 annually, along with placement in paid work experience through the CSUS Cooperative Education program, the largest co-op program in California. The combined funds should cover most of an average student’s expenses, including housing. Students also will receive mentoring and professional development assistance.

“Our idea of blending the scholarship with co-op work experience really got the attention of NSF,” said Larry Hill, director of the CSUS Cooperative Education program. “We’ll be able to help students get college funds through both scholarships and solid work experience.”

The first scholarships were awarded this semester.

The new scholarships build upon the Project Success model developed through the MESA (Math, Engineering, Science Achievement) Engineering and Computer Science Program, which will administer the grant. Project Success helps about 30 high-achieving engineering students each year find paid positions in their fields, and provides counseling and monitoring programs.

IEEE Student Chapter Wins

Last May, the IEEE Student Chapter at ECS competed in the Region IV Central Area Student Competitions. The Central Area is home to 14 student branches including UC Berkeley, Stanford, and UC Davis. The meeting features Student Paper, Design, and Micromouse contests. Students from ECS won first place in all three competitions.

In the paper contest, ECS’ John Paeng’s “An Opamp Integrated Circuit Design,” took first place, and Cyndi Abundaba’s “Fuzzy Controls vs. Traditional Controls Design of an Inverted Pendulum,” took second. In the Design Contest, Jeremy Nasca, John Deanda, Preeti Goyal, Mary Ann Hudatsperth, and Alex Keyhan took first place with their “Firefighting Robot.” In the Micromouse Contest the ECS Team, “Kangaroo” took first place as well.

Intel Grant Continues to Fund Engineering Scholarships

The Intel Foundation, the charitable arm of the Intel Corporation, has renewed their grant to support student recruitment and academic scholarships at the College of Engineering and Computer Science.

The initial grant of $10,000 covered five renewable scholarships for first-year students who intend to major in electrical and electronic engineering, computer science or computer engineering. The Intel Foundation has renewed the support of these students, and added funds to cover scholarship support for five additional freshmen. Students who demonstrate success in advanced mathematics and science in high school and community college, possess a high school GPA of 3.5 or higher, achieve minimum SAT or ACT scores of 1150 or 26, respectively, and exhibit leadership in other activities are eligible for consideration.

The current Intel Scholars are David Ramirez, Eldridge Magett, Christopher Pascual, Apollo Balamassy, and Anhvu Nguygen. Selection for the new Intel Scholars is currently underway.
Salary Report for Recent Graduates from the Career Service and Planning Office

The summer salary report received from the National Association of Colleges and Employers (NACE) indicates that the 1999-2000 recruiting season was "... characterized by large percentage increases and high starting salary offers ...". The NACE also indicated that there was "remarkable strength" in the college job market. The national unemployment rate has been holding at close to 4.0% with some areas like San Francisco reporting rates of below 2.0%. Between July 1999 and July 2000 the number of jobs in the Sacramento area increased by 21,000!

The data from NACE reflects significant jumps in average offers to technical BS graduates between July 1999 and July 2000. Average starting salaries for computer science graduates were up 9.9 percent to $48,740. Offers to CS graduates were mostly in information systems, computer programming, systems analysis and design and consulting. Primary employers of CS graduates included systems design companies, computer manufactures, consulting firms, software publishers, and communications organizations. Average starting salaries for computer engineering graduates jumped 9.6 percent to $49,500.

Offers to CPE graduates came mostly in software design and development, hardware design, consulting, and systems engineering. Average offers to EEE graduates jumped 7.5 percent to $48,492. EEE graduates took positions mostly in hardware design, software design, project engineering, systems engineering, and manufacturing engineering. ME graduates climbed 5.9 percent to $45,617 and received positions with transportation equipment manufacturers, engineering service firms, and electrical equipment manufacturers. CE graduates saw an increase of 3.9 percent to $37,567 and most offers came from the government sector. The data was not available for CM or MET.

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Cici Mattiazi, Program Director

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<th>Bachelor's Degrees</th>
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<th>Low 25 percent</th>
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Summer 2000 National Salary Data Source: National Association of Colleges and Employers Salary

Due to the fact that most of our graduates take offers in the high cost of living areas of Northern California, CSUS College of Engineering and Computer Science offers tend to range significantly higher than the national average for recent grads. Our graduates most frequently end up with offers in the 90th percentile as shown above.
ME Student Launches into Esteemed Space Program

CSUS student Shane Kemper has a great “how I spent my summer vacation” story for his classmates this fall. Kemper was accepted to the prestigious summer program at the International Space University. The school gives promising students from around the world a chance to explore broad new perspectives on space activities. The summer program has a roaming campus, and this year’s host country is Chile.

During the intensive two and a half-month summer program, Kemper studied space system architecture and mission design, space engineering, space policy and law, and more.

Kemper believes he is the first person from the CSU system and the Sacramento region to be accepted to the program.

“I was very excited to be given the opportunity to work with people of many different cultures and backgrounds who all have my same common interest — space. It has been a life dream of mine to attend the International Space University,” says Kemper.

Kemper recently won first place in the 14th annual CSU systemwide student research competition. His winning paper was based on his mechanical engineering senior project, which was suggested by scientists at NASA. It was on a tool to help analyze the lift and drag of a model delta-wing aircraft.

Kemper is currently working on his master’s degree in mechanical engineering at CSUS and plans to earn a master’s degree in space science from the International Space University. He is also considering pursuing a doctorate degree in astronautical engineering.

“One of my career long term goals is to head up or be a part of an international team to set up a permanent manned station on the moon and on Mars,” says Kemper.

Important Workshop for Area Teachers Held

Teachers from area high schools attended the SETRC (Sacramento Engineering and Technology Regional Consortium) Workshop at the College of Engineering and Computer Science on Oct. 7. The workshop, “Developing and Articulating Pre-Engineering Curriculum At The High School Level,” was designed to provide information and knowledge to the participants about engineering both at the high school teaching level, (and by association, as a major here at the College).

The workshop was co-hosted by SETRC, the College of Engineering and Computer Science, and the MESA Engineering Program. SETRC’s goals are to promote engineering education from K-16, including high schools, community colleges and 4-year universities.

Participants, who represented Center High School, Oakmont High School, Milpitas High School, Roseville High School, Colfax High School, Casa Robles High School, Marina Middle School, Grant West, and Cameron Society of Engineers/CA Middle School, specifically praised the hands-on experiences, the variety of sample labs, the materials about robotics and digital circuits, and learning new lessons and ideas to pass onto their students.

The workshop was attended by a number of ECS faculty members, and was organized by EEE Chair, S.K. Ramesh.
**Report on Engineering Graduates from Business Week**

A report in the August 28 issue of Business Week offers a less than rosy picture of the future of engineering graduates in the United States. According to a survey done by the National Science Foundation, the United States ranks 19th (tying with Slovakia) in the number of science and engineering graduate students among 24 year-olds. This reflects a rate of 5.4 24 year-olds in programs out of every 100 24 year-olds in the population. This maintains a 30-year trend in the U.S., although other countries such as Britain have seen their numbers at least triple.

CSUS takes these numbers very seriously. The College has in place an active program of outreach to area middle and high schools, extensive contact with high school guidance counselors, and has significantly increased its recruitment efforts throughout the area.

For example, in December 1999, ECS hosted its second annual Counselor's Forum, targeted toward high school guidance counselors and high school teachers in the areas of science, mathematics, and engineering. The Forum brought them on campus and provided them with information about majoring in engineering in general, and about the programs at the College in particular.

More than 50 counselors from the greater Sacramento area attended the event. On October 7, the College hosted an "Introduction to Engineering" all-day workshop for educators in our area in the fields of Science, Math, Engineering and Technology. This helped keep them on the cutting-edge in instruction and teaching.

In addition, activity in recruitment and outreach has been significantly bolstered by a grant of $15,000 from the Intel Foundation to cover the costs of printed materials and high school outreach visits by faculty, the active participation in recruitment by faculty members, and the efforts of the College's Industry Advisory Board. The Board is looking into ways to assist the College in student recruitment and retention, including increasing outreach, enlarging on-campus recruitment events, and significantly increasing scholarship support for students.

**New Lab Offers Powerful Lessons**

A loud micro-turbine generator that began life as an aircraft's backup power is now the star of a CSUS lab, where engineering students are getting their hands on a possible solution to the state's growing energy shortage.

The CSUS "Cogeneration Lab" produces energy in the micro-turbine, which operates on natural gas. It then uses the thrown off steam to power a large refrigerator.

Relatively simple in theory, cogeneration yields impressive results as far as overall efficiency. And the technology is becoming much more widely used in the real world.

"The technology is becoming extremely popular, so when our students go out in the workforce having hands-on experience working on them they will have a definite advantage," says Andrew Banta, the CSUS mechanical engineering professor who led the effort to build the new lab.

Cogeneration all starts with turbines, which, as a class, are much smaller than traditional steam plants. They're little more than jet engines modified to sit on the ground, and are better for the environment than steam plants. They can also power up in minutes rather than many hours, allowing quicker and cheaper response to peak energy demands.

All of that has attracted the attention of power companies.

The catch is that turbines cost too much to operate on their own. They're only economical when they're also used to power a secondary operation by producing steam, which is the essence of cogeneration.

Locally, for example, the Campbell Soup company powers a steam turbine with heat thrown off by SMUD gas turbines.

At CSUS, the cogeneration lab produces enough electricity to power 10-12 homes, and powers a refrigerator about three times the size of a typical home air-conditioning system.

Both the electricity and cooling are essentially wasted. But the experience about 100 students are now getting every year with cutting edge energy technology is invaluable.

For instance, students are learning to measure the energy output of a cogeneration plant, and experimenting with various ways to make the plant more efficient. They're working with turbine efficiency and heat transfer rates.

"There are so many possibilities, we could be doing new experiments for quite a while," Banta says.

The lab was installed in Santa Clara Hall last year, and is now getting its first semester of use. It replaces an old steam turbine system that was out of date and becoming increasingly difficult to maintain.

Bruce Scott, head technician in the College of Engineering and Computer Science, led the installation of the new lab, with help from Jim Penaluna, also a technician in the College.

Planning and funding the lab took six years of work by faculty, students and staff. Over that time, Banta and his group acquired more than $250,000 in grants and gifts for the project. The National Science Foundation provided $100,000; SMUD gave $70,000; PG&E gave $20,000 and the University provided $75,000.

In addition, the planning and design of the lab provided senior projects for numerous groups of engineering students.

Banta says he's thrilled with the result, but he's still hoping to do more. His next goal for the lab is adding a steam turbine, so that students can learn to manage a cogeneration plant using that common feature. It's a $100,000 project.
Caltrans Storm Water

Trash, chemicals, metal deposits — if it’s bad for the environment and making its way from California roads into your water, then a fast-growing research group at California State University, Sacramento wants to know about it.

Starting from a humble $20,000 grant just five years ago, the storm water research group, a part of the University’s Office of Water Programs, now has a budget of $2.3 million, all through contracts with Caltrans. It has grown to include 15 researchers and support staff.

Working from unassuming offices just south of the CSUS campus, the group has become the brains behind Caltrans’ statewide assault on road pollutants being flushed into the state’s rivers and lakes.

The group plans and evaluates numerous projects each year, ranging from measuring trash that washes down to beaches during storms in Southern California to studies on herbicides and other highway runoff in North Coast streams. They’ve helped Caltrans take a more environmentally friendly approach in its own construction work. And they’ve helped initiate new approaches to controlling polluted runoff — detention basins, infiltration basins, drain inserts and others — 37 of which are being tested in Los Angeles and San Diego.

“We’re trying to help them find out how big a problem they have, and then to find cost-effective ways to control it,” explains Ramzi Mahmood, director of the CSUS Office of Water Programs who started the storm water group in 1995.

Mahmood says the group has filled an important niche. They don’t carry out research projects themselves, but they formulate research questions, manage the research work done by private consultants and other groups, and evaluate the results.

Compared to all the other sorts of environmental problems the state faces, water pollution from roads may seem like a drop in the bucket.

But the number of buckets warrants attention.

Each year, millions of gallons of water wash across the 15,000 miles of freeways and highways Caltrans maintains. This has made complying with the Clean Water Act a major headache for Caltrans, and one it wasn’t equipped to deal with when it first approached the CSUS Office of Water Programs. Caltrans, after all, is charged with developing the state’s highway and mass transit systems, not protecting water resources.

“Of course, the real solution would be to go to the guys in Detroit and tell them to change the way they build cars,” says Howard Yamaguchi, a UC Davis researcher who joined the water group three years ago.

“That doesn’t seem likely, though, so Caltrans is stuck dealing with a problem that is often beyond its control,” Yamaguchi says. “What is clear is that Caltrans will have to change the way it does things over the next decade to be certain it isn’t creating any more problems and to solve problems when it can.”

Concern that Caltrans wasn’t doing all it should prompted a successful lawsuit against Caltrans by the Natural Resources Defense Council in the mid 1990s.

Since then, the agency has been working hard to get a handle on the problem. The research group at CSUS was involved from the beginning.

While there were plenty of firms and research institutes to actually conduct the studies and carry out the sophisticated water testing Caltrans needed done, none were in a position in 1995 to help Caltrans ask the right questions, Mahmood says. That’s where his group of scientists and engineers came in.

“I realized we had a great opportunity to build a group to work on this,” says Mahmood. “We had the expertise right here in the Office of Water Programs and in our contacts with many of our recent engineering graduates. So we went to work.”

The group’s success stems from the Office of Water Programs’ long experience working with government agencies and its location in California’s capital, Mahmood says.

At first they depended on a contingent of recent CSUS graduates classified as “academic associates” and interns from the engineering program. Later, the academic associates were promoted to full staff, many of the interns were hired and other engineers were brought on board.

In a growing state, new road pollutant problems are almost certain, and the group plans further growth in the near future. They hope to branch out and begin working with counties and other local governments, all of which maintain their own roads and have many of the same issues as Caltrans.

Current projects include researching methods of detecting pathogenic organisms in storm water, testing different methods of reducing soil erosion, inventing new treatment technologies and evaluating the cost and benefits of storm water treatment.

And they’re completing a comprehensive, three-year program to determine how to reduce the Southern California beach litter problem. Strategically placed “litter bags” are capturing litter as it flows toward the beach, and labs are analyzing the litter’s weight, volume and count. Strategies for reducing the trash will almost certainly be used in other parts of California — and probably copied by other states as well.

“People can see litter, and when they do, that really gets them going,” Mahmood says. “Getting rid of litter is important to people, so we’re working with Caltrans to try to do that.”
