Alumni/Cal Poly Partnership Blooms Into Cisco Advanced Network Lab

When Cisco's Chairman of the Board John Morgridge came to Cal Poly to dedicate the Cisco Systems Advanced Network Laboratory, he paid tribute to the Cisco employees and Cal Poly staff who made it all possible. "In the computer industry, it's very easy to make that (university) contact a check. But for partnerships, you need human involvement."

Cal Poly benefited from that human involvement as Cisco representatives and Cal Poly technology staff spent about six months planning the lab and another six months assembling it in the Engineering East Building. Much of the installation and setup of the facility was performed by Cal Poly alumni now working for Cisco.

"...for partnerships, you need human involvement."

Barry Bruins (BS CSC 1983), a director of engineering at Cisco, is enthusiastic about alumni involvement in the project. "By getting alumni involved with the networking curriculum, we were able to make major improvements in the..."
Great Things Are Happening

We extend our thanks again to all of our alumni and friends who have so generously supported the Computer Science Department in accomplishing its educational objectives. As we prepare to embark on the University’s Centennial Campaign, we are excited to report a significant “head start” in our effort to raise outside funds, thanks to several recent major gifts. We’ll be able to share this news publicly soon.

Are These Exciting Times, or What!? A Message From The Department Chair, Sigurd Meldal

I n my hand I hold a small piece of equipment – say the size of a quarter or so, and as light. When I slip this sliver of a thing into my camera (or into my laptop computer), I gain one gigabyte of storage space. The little microdrive is a 4500 RPM hard disk. Give me a couple of those and I can store all the documents I have ever created across the length of my professional life.

For a romantic such as myself this is mind-boggling: Moore’s law in action, and so tangibly so. The technology development underlying our profession has only one direction – forward, and only one speed – full tilt. What goes for the profession holds for the department as well. The students, faculty and staff are enjoying this ride into the future together. Together with our alumni and industrial partners, we are providing future computer science and computer engineering professionals with a solid foundation in their profession, coupled with a true can-do attitude when faced with new challenges.

We have enjoyed a successful start of this academic year, with US News & World Report ranking the department first in the nation among primarily undergraduate computer science departments. One aspect of our success is the superior adaptability of our curriculum. While ensuring that all our graduates possess the core competencies of successful computer professionals, the department is continuously evaluating our strategic direction, modifying and improving our curriculum as needed.

I would like to draw your attention to two new areas of development: bioinformatics and software engineering. In the field of bioinformatics we see the synergy of two exploding research and development areas: computer science and molecular biology. The potential for improving the human condition arising out of this field is immense, and computer systems comprise a core, enabling technology for the mapping and analysis of genomic material. [See related article on page 5.]

Closer to the core of our profession, the department is creating a new major in Computer Software Engineering. Taking the best of Cal Poly’s “learn-by-doing” tradition and the excellence of the established Computer Science and Computer Engineering programs, we are creating a software-oriented engineering program that retains the solid foundations of the existing programs, adds more mathematics and engineering science, and tops it off with an introduction to the challenges and joys of technology team management. Students will engage in large-scale, client-oriented systems development for real customers. They will also make engineering tradeoffs while striving for that often-elusive engineering goal of delivering a significant software product on time, on target and on budget. [See related article on page 9.]

As we are enjoying a strengthening of support from industry and alumni, I invite you to join us in the exploration of these new directions, and in maintaining the high quality of our existing programs and offerings.
Gary Bloom, a 1982 graduate of Cal Poly's Computer Science Department, was recognized as the College of Engineering Honored Alumnus during Homecoming 2000 events. Bloom, CEO and president of Veritas Software Corporation, was honored for career achievement as well as service to Cal Poly. Only one alumnus is chosen for the award each year.

Homecoming honors included a university wide reception and dinner, participation in an open panel discussion, and a half-time presentation at the Homecoming football game. In addition, about 40 computer science faculty, family and friends honored Bloom at a private luncheon.

**Distinguished Career**

As Chief Executive Officer and President of Veritas, Bloom oversees all corporate functions. He is responsible for the formulation of current and long-range plans and objectives, and represents Veritas to its customers, business partners and the community.

Bloom joined Veritas Software from Oracle, where he served as executive vice president. During a fourteen-year career at Oracle, Bloom oversaw Oracle's core database business and led the execution of Oracle's Internet and e-business strategies. Bloom also was responsible for Oracle's worldwide marketing, support, education and alliance organizations; mergers and acquisitions; global information technology; and the Oracle Venture Fund. In addition, Bloom served as the executive responsible for Oracle Business Online, OracleMobile.com, and Oracle e-Travel, where he was chairman of the board.

Before joining Oracle in 1986, Bloom held technical positions at both IBM Corporation and Chevron Corporation.

**Service to Cal Poly**

Bloom serves on the Cal Poly President's Cabinet and will speak at Cal Poly's Founder's Day Colloquium and Convocation on September 27, 2001, as part of the university's Centennial Celebration.

Bloom has actively maintained contact with computer science alumni in the Bay Area and was the keynote speaker at the Computer Science Awards Banquet in 1999.
Honor Roll of Donors

Your contributions make a significant difference to us!

We thank the following contributors to the Computer Science Department. One hundred percent of this money goes to the department and is used to benefit both students and faculty professional development, which indirectly benefits the students.

In-Kind Gifts
- Rational Software Corp
- Cisco Systems Inc
- Microsoft Corp
- Silicon Graphics Inc
- Metro werks Corporation
- COMPAQ Computer Corp
- Chris & Emilia Buckalew
- Apple Computer Inc
- Electronics for Imaging Inc
- Gene Fisher

Delta Society ($1,000 or more)
- Susan Armstrong
- Richard & Lynn Bergquist
- Patricia Burnett
- Cisco Systems Inc
- Stephen & Julie D'Angelo
- Charles Dana Jr.
- Lois De Martini III & Kathy De Martini
- Harland & Grace Duncan
- Edison International
- Albert Hall
- Hewlett-Packard Co.
- Gregory & Nancy Hobbs
- International Business Machines Corp.
- IP Tech
- Irene & Ralph Zalhan
- Charitable Fdn
- Steven Jankowski
- Bruce Mengler & Susan Graham
- Prototyping & Development Heuristics, Inc.

Graphics Alumni Reunite at SIGGRAPH

Cal Poly set a new record for participation at SIGGRAPH 2000, the international computer graphics conference, which was held in New Orleans for the first time since 1996.

This year there were two talks given by Cal Poly grads. Jim Berney (MS CSC 1994) organized a full-day course about the effects that were done in the Sony movie Stuart Little. Scott Peterson (BS CSC 1997) gave a talk on how the trees and plants were done for the PDI film Shrek, due out in May. In addition, there was a Disney course on the effects in Dinosaur, which showed some of the tools developed by grads David Tesch (BS CSC 1993) now at Blue Sky, and Peter Palombi (CSC Minor 1993) now at Sony Imageworks.

Each year at SIGGRAPH, Cal Poly professors, students, and graduates get together for lunch to catch up with each other’s work and exchange views about the conference. The lunch attendees were Chris Buckalew, Lew Hitchner, Scott Peterson (PDI), David Tesch (Blue Sky), Brian Cross (BS CSC 1998, Microsoft and Vizolutions), Tom Dilligan (BS CSC 1995, Industrial Light & Magic), and Alesh Jancarik (MS CSC 1995, Intel). Other Cal Poly “sightings” were David Meny (BS CSC 1995, Industrial Light & Magic) and Patrick Sheehan (CSC, Sun).

This year SIGGRAPH will be held in Los Angeles August 12-17. We hope to see you there! We’re planning the lunch for Thursday at noon. We’ll meet at the message board at 11:40 and probably go offsite for lunch. Look on the SIGGRAPH message board (under “Cal Poly”) for more details. The lunch is a great time to see friends you haven’t talked to in a while or even to meet fellow graduates that you never knew at Cal Poly!

Piling Success Upon Success... the Year in Numbers

A summary of the good things happening to the Computer Science Department the last 12-18 months:

- Mr. and Mrs. Al Yackle donated $30,000 in scholarship funds in memory of their son Brad.
- Cisco, Intel and NetCom collaborated to establish a $1,000,000 networking laboratory.
- Rationale Software donated $2,500,000 in CASE tools.
- Compaq upgraded the Tandem Systems Laboratory with 20 state-of-the-art workstations and funded a $20,000 project on a static analysis tool.
- Raytheon awarded faculty and students $120,000 in R&D contracts.
- US News & World Report ranked the Computer Science Department #1 in the nation.
- The Computer Science Department received a $100,000 endowment in support of computer software engineering (with a pledge of $100,000 annually over the next four years).
- Alumni who call themselves the Pesto Group established a “donor-advised” fund and contributed the first $12,000.
- Total unrestricted contributions to the department has reached approximately $115,000 per year.
- Professor Clint Staley received the Cal Poly Distinguished Teacher Award (2000).
- Ellen Stier received the Cal Poly Outstanding Staff Employee Award (2000).
- Professor Sigurd Meldal received certificates of
Biology Meets Computer Science

The sequencing of the human genome is a thrilling achievement. It has been likened to landing on the Moon, splitting the atom and even inventing the wheel. Nature 2/12/2001

Bioinformatics is a fast growing discipline that combines molecular biology with the computational and physical sciences. Its focus is the development of computer tools and models to generate, organize, and analyze biological data and model biological processes. Now that the sequencing of DNA molecules that makes up the human genome is complete, the exciting work of analyzing and using that data for new diagnostic tools and treatments for human illnesses will accelerate.

Data on the structure of DNA and protein molecules in humans and other species continues to improve our understanding of biological processes. This new understanding promises to revolutionize fields as diverse as agriculture, medicine, and law enforcement. At the same time, these advances have raised computational and storage problems that require sophisticated tools and models.

The Cal Poly Computer Science Department (collaborating with the Biology Department) is offering a course series in bioinformatics designed for computer science and biology students interested in understanding the tools being used to solve these biological problems.

The courses include labs where biology and computer science students work together on bioinformatics projects. This has expanded opportunities for students to work in multidisciplinary teams and increase their understanding of other domains outside their major.

Professors Sigurd Meldal and Tim Kearns have led the effort from the computer science side.

Students from the courses have already accepted positions in bioinformatics at leading edge biotechnology companies.

Some URLs where you can obtain more information on Bioinformatics and how it is affecting our lives:

www.nature.com/nature/
www.the-scientist.com/homepage.htm

YEAR IN NUMBERS, CONT

Congressional as well as California Assembly Recognition.

- Student Neel "Bubba" Murarka was appointed to the CSU Board of Trustees by Governor Gray Davis.
- Metrowerks donated $160,000 worth of development tools.
- Microsoft donated $566,650 worth of development tools.
- The average high school GPA of entering freshmen was 3.98.
- The average SAT score of entering freshmen was 1347.
- The California Workforce Initiative provided the Computer Science Department with a budget augmentation of $240,000.

DEAN'S ASSOCIATES ($500 to $999)

Bank of America Corp
Gary Bloom
Bae Chon
Weston Clark
Conexant System Inc
Donald & Marguerite Erickson
Michael Ernst
Bradley Flood
Glen Goto
The Home Depot
Honeywell
International Inc.
Ernest Hughes Jr. & Jane Hughes
Gail Kirschenmann
Mark & Cynthia Lucovsky
Sigurd Medal
J. Bradley & Janet Morris
Faye Mowery
Lee & Janann Nakamura
Northrop Grumman Corp
David & Shannon Perdue
Robert & Catherine Ragle
Jeffrey & Carol Richardson
Janet Stuche
Mark Swanson
Timothy Thomas
Iris Walters
Jarold Weiser
Donald Welch Jr. & Jennifer Welch
David White
Staley and Stier Earn University Honors

Professor Clint Staley and Administrative Analyst Ellen Stier were chosen as recipients of the highest university honors for outstanding faculty and staff for the 1999-2000 year. Staley, legendary enough to have a student-run web site devoted to him, was named Distinguished Teacher. Stier, who was described as “the glue that holds the department together,” was named Outstanding Staff. Each award is given to only three employees each year.

Staley has taught computer science at Cal Poly since 1988 and has earned numerous department and college teaching awards over the years. He is described as “the toughest professor you’ll ever love,” and was lauded for his ability to challenge students and bring real world experience to the classroom. Staley teaches the accelerated introduction to computer science (imagine taking the first year of the computer science core in one quarter), as well as object-oriented GUI design courses.

Stier was honored for her “wisdom and counsel” along with her job performance. According to the Computer Science Department chair, Sigurd Meldal, “She stands out by really caring about the department and being aware of all the technical, professional and political issues that affect all of our work.” Stier has been chair or member of many department, college and university committees and is respected across campus. She has been at Cal Poly since 1984.

Distinguished teachers are nominated by students and alumni of the university, and selected by a committee of past awardees. Outstanding staff are nominated by faculty, staff or students, and are also selected by a committee of past awardees. Staley and Stier were both honored at university-wide events during Fall 2000.

Staley Web 1.0 [sigkill.com/staley/index-staley.html] contains such links as Staley Quotables (“The total possible points was 205. The average was 116 which is fine”), Robot Roulette, Staley Survivors, and StaleyWear. Check it out!
Faculty Transitions

Retirements
Four long-time professors have elected to enter the Faculty Early Retirement Program, which enables them to stay active on the faculty while teaching fewer classes.

Professor Elmo Keller keeps up with the latest trends as he teaches operating systems by using Open Source Linux. Professor Keller is one of the mainstays of the department and students are happy he has decided not to retire entirely. Professor Keller has recently written and published a Keller (Kjoller) family history covering the time since his family left Denmark, Ireland, and Scotland in 1853.

Professor Ray Boche continues to enjoy teaching introductory computer architecture courses one quarter each year. He has traveled the US countryside in search of antique windmills to restore. He's up to seven in all, and is currently restoring a 1900 wooden wheel model. He's also working on a 1947 Corbitt work truck, a regional brand made in North Carolina.

Professor John Connelly continues to study and teach operating systems. He remains very involved with students and was recently named the most supportive professor in the College of Engineering by the Society of Women Engineers. He finds that semi-retirement gives him more time to study and travel. He and his wife have plans to travel to French Polynesia, Scandinavia, and Russia this year.

Professor Pat Wheatley enjoys the partial retirement, which gives him the opportunity to keep contacts with students and the Computer Science Department, and spend more time preparing for his numerical analysis courses. He has more time to get plenty of exercise and keep up with his two full-sized dogs: a standard poodle and a larger Italian spinone, which are out the door every morning before six.

New Assignments
Professor Sigurd Meldal began a three-year term as department chair in September. Before coming to Cal Poly in 1997, he was professor and chair of the Department of Informatics at University of Bergen in Norway, and a consulting professor of electrical engineering at Stanford University. He comes to software engineering from a background in theoretical computer science. He is excited about the opportunity at Cal Poly to combine solid conceptual foundations with their immediate application in practical software systems development.

Electrical Engineering Professor Art MacCarley has begun a three-year term as director of the Computer Engineering Program. He is joined by Computer Science Professor Len Myers as associate director. Former CPE director Joe Grimes is now Special Assistant to the Provost for Faculty Development and Industrial Relations and continues to stay in touch with computer engineering and computer science students by teaching part-time.

Professor Jim Beug is enjoying his return to full-time teaching after seven years of service as department chair. He finds himself working harder than ever keeping up with the latest developments in operating systems and compilers. This former "new kid" finds himself in the unexpected position of revered old timer.

New Faculty
Associate Professor Tim Kearns' main computer science interests are database management, data warehousing and networking. He is also working with other engineering departments and the biology department to build a strong set

Continued page 14
The growth of the Internet and its impact on commerce and privacy has made security an important issue for everyone. According to one survey, 85 percent of companies reported that they had detected a security breach in the past 12 months. The amount of money lost due to computer crime is rising each year. Although many experts emphasize the need for more computer professionals trained in security, most college faculties do not have the expertise.

Cal Poly formed a partnership with a number of companies (see sidebar—INDUSTRY PARTNERS) to deliver an introductory course in security to its students. Security experts with a broad range of expertise from different companies taught at Cal Poly this Spring. They provided students with an up to date, realistic picture of the tools and techniques used to provide their customers with secure systems.

The course was targeted at computer science or computer engineering majors. Associate Professor Tim Kearns provided background lectures and administered the course. Industry experts met with students and gave lectures on different aspects of security. In addition, an optional lab provided experience in preventing, detecting, tracking, and responding to security attacks.

**INDUSTRY PARTNERS**

- Brocade
- Cisco
- Compaq
- Hewlett-Packard
- Intuit
- Lockheed
- MediaSnap
- Microsoft
- PeopleSoft
- Raytheon

**SECURITY COURSE TOPICS**

- What is security, its history, security standards
- Authentication and access control
- Network security, firewalls, intrusion detection
- Attacks on network protocols: e.g. address spoofing, DNS attacks
- Intrusion detection and analysis, application proxying
- Design and implementation of secure networks
- How much security is enough
- Public and private key systems
- Security and the Internet

**INDUSTRY PARTNERS**

- Brocade
- Cisco
- Compaq
- Hewlett-Packard
- Intuit
- Lockheed
- MediaSnap
- Microsoft
- PeopleSoft
- Raytheon
Cal Poly's Computer Science graduates are well-known for their can-do, ready-to-contribute preparation for professional careers in computing. Some students get to affirm that preparation while establishing their professional credentials - well before the official graduation date. Besides academic course offerings, the Computer Science Department also provides students the opportunity to participate in significant software development projects together with faculty members. Sometimes they even get to manage technical teams.

Just such an opportunity was given to Eric Wood and his teammates by Raytheon Systems last year. Ray Stratton of Raytheon, a member of the Department’s Industrial Advisory Council, provided contacts that connected Al Hoblit of Raytheon with Professor Sigurd Meldal. Together they defined a project investigating modern technologies to make it easy to develop software supporting multiple languages. A team of students, J. Kris Fox, Jeremy Farabaugh, Matthew White, Michael D’Agosta, Sean Watters and Dan Battagin, under the leadership of Eric Wood, then explored the area. On their recommendation, Raytheon returned with a development project where Cal Poly would deliver a set of development tools that Raytheon would use to improve their time-to-(international)-market.

As the Cal Poly team provided Raytheon with one satisfactory (and on-time) deliverable after another, the projects increased in size and importance until the student team found itself developing critical technology components for Raytheon's contribution to the U.S. Navy’s Zumwalt-class Land Attack Destroyer, DD 21 – the first in a family of 21st century surface combatants. Cal Poly’s software was part of a successful demonstration to Navy Admirals in September.

Probably more important than the delivery of any one system was that the Cal Poly team also served as a catalyst for technology transfer, providing their industrial co-workers with insights about Java-based technologies. In exchange, the students gained experience in large-scale systems development and Eric Wood can add the leadership of an industrial development team to his already impressive resume – while he still has a year to go before graduation.

Computer Software Engineering Degree Proposed to Join the Cal Poly Lineup

To answer a growing need for practitioners who combine the best of software development and engineering discipline, the Computer Science Department has proposed a new Bachelor of Science Computer Software Engineering (BSCSE) degree. The program, if approved at all levels of the review process, could accept its first students as early as Fall 2003.

Back in the 1960s and '70s most software development was about achieving efficient calculation. The focus in software research and practice was to create new programming languages and better algorithms: a mathematical endeavor.

The increasing complexity and scale of today's software has moved the primary challenge of software construction from the details of efficient code generation more towards component-based system construction and the ability to make tradeoffs involving reliability, cost, time and even safety. In order to make such tradeoffs in a responsible manner, practical knowledge of engineering principles is a necessity. The field of Computer Software Engineering has traditionally addressed the problems associated with all aspects of the development of large-scale computer systems.

Trends in software development also underline the important need for an engineering-oriented curriculum. Even simple programs involve many thousands of lines of code. As a result, students must learn by analyzing, modifying, and using existing software, rather than simply writing small programs on their own.

Tools necessary for modern Computer Software Engineering have similarly advanced. An editor and compiler are no more adequate for gaining a professional mastery of software construction than the use of a home chemistry set is for the teaching of industrial chemical or biological processes. A standard industrial software systems project may require thousands of dollars worth of development software, including databases, middleware libraries, GUI libraries, source-code control systems, object-oriented design tools, and associated hardware such as dedicated servers, computer networks, and workstations.

Furthermore, one individual, no matter how capable, can no longer develop the complex software required to meet society's demands. Most software design and construction involves a complex engineering process, and our students must learn to work effectively in teams in order to succeed in the current market for software practitioners.

Computer Science, Computer Engineering and Computer Software Engineering

The majority of the graduates from the Computer Engineering and Computer Science programs develop and/or maintain software applications. A large proportion of the jobs today are in computer software applications development, i.e., Computer Software Engineering.

Cal Poly surveys each year's graduates, achieving a representative sample of their professional direction. Of those surveyed, 40% were employed as Computer Software Engineering professionals, even

Continued right
though their degrees were in computer science or computer engineering.

In many respects, the establishment of a Bachelor of Science Computer Software Engineering degree constitutes an identification and labeling of an existing curricular path in a growing discipline. The Computer Science Department has offered a sequence of courses preparing students for a Computer Software Engineering profession for a number of years, and has recently added three new courses specifically addressing the students' need for management experience, providing them with an emphasis on the engineering of computer software development.

The Computer Software Engineering degree differs from the Computer Engineering and Computer Science degrees in significant ways:

- The CSE classes place an emphasis on software processes and lifecycles.
- The CSE classes include significant learning in engineering and management areas (software quality assurance, testing, software metrics, maintenance issues, configuration management, and personnel management).
- The CSE degree has a stronger emphasis on mathematics and the use of engineering methods in software design.
- The CSE degree provides the students with a solid foundation of general concepts and specific technology skills.

**Gaining an Industry-Oriented Experience in Sizeable Projects and Project Management**

The last two years of the CSE program focus on the specification, construction and deployment of product quality software systems. The curriculum includes a year-long capstone sequence where the students work in teams to build a large software system. Students are required to complete a co-operative education experience prior to enrollment in the capstone courses.

A unique feature of the capstone courses is their integration with lower division courses. The laboratory periods of the upper-division sequence are integrated with sections of the lower division sequence. The senior Computer Software Engineering students work in teams to build deployable software, and the teams will be made up of students from both the upper division and the lower division courses. Thus the upper division students will also serve as technical and administrative leaders for the lower division students on their teams.

If you would like to discuss the proposed computer software engineering degree program in more detail, contact Associate Professor Dan Stearns at dsteams@calpoly.edu

“...our students must learn to work effectively in teams in order to succeed in the current market for software practitioners.”
CISCO, CONT.

students’ knowledge of the fundamentals of Internet technology,” Bruins said. “These fundamentals will help them in whatever area of the Internet economy they find themselves.

The Cisco Advanced Network Laboratory replaced the old networks lab and has allowed the network offerings in the curriculum to expand. A new graduate computer networks course has joined the list alongside the two undergraduate network courses. Besides Computer Science and Computer Engineering students, the lab also serves the College of Business network courses.

The lab configuration offers enough equipment for 32 students to perform network experiments simultaneously, using switches, hubs, routers with Voice Over IP as well as ATM, fast ethernet, token ring, and ISDN capabilities. Cisco’s major support for the lab was enhanced by donations from Intel and NetCom, bringing the total cost of creating the lab to about $1 million.

Bruins said Cisco looks forward to a continuing, long-lasting relationship between Cisco and Cal Poly, and is already seeing the benefits of the partnership. “Seeing students excited about the technology and eager to apply their knowledge in the industry is a reward in itself.”

There are currently about 300 Cal Poly graduates working for Cisco Systems.

A Letter From The Past Department Chair, Jim Beug

Dear Friends,

I would like to thank everyone for the support they have given the department in the seven years during which I had the privilege of leading an outstanding department. I would particularly like to thank the members of the CSC Industrial Advisory Committee for the input and support they gave as we re-started the IAC, the alums for their outstanding successes and continued support, the parents, staff and faculty, and particularly my predecessors, Professors Wheatley, Camp, Webre, Attala, Stubbs, and Gerald. Special thanks to Curtis Gerald and his colleagues for starting it all off many years ago.

After a brief respite this past Fall quarter, I have returned to fulltime teaching in the area of operating systems for the rest of this year, and expect to continue to work in the areas of operating systems, architecture and of language design and implementation. On the other hand, of course, I am always open to new challenges and problems as they come along. I believe the department is in excellent hands under the leadership of Professor Sigurd Meldal and the outstanding faculty and staff who have joined us over the years. Please keep in touch, and continue to support their efforts to provide an outstanding learning environment for our students.
First Yackle Scholarship Awards Made

The first fruits of the Brad E. Yackle Scholarship in Computer Sciences Endowment were realized when sophomores Bao Chao Nguyen and Brian Curry were named the initial recipients at the annual awards banquet last year. Mr. Yackle's parents, AI and Ruth Yackle, were on hand for the event.

The scholarship endowment, established in 1998 after the death of Brad Yackle (BS CSC 1974), opens doors for well-qualified students who might otherwise miss out on the exciting opportunities of the computer science field. Yackle had a long career at Hewlett-Packard, where he worked on new product lines including the HP 64000 micro processor development system and later software engineering test methods, software engineering tools, and chemical analysis instruments. He is remembered by Professor Emeritus Emile Attala as having "a brilliant mind coupled with a great sense of humor that made it a pleasure to have him around."

Through the Yackle's continued support, the endowment fund is now able to award several scholarships each year. Fellow alumni are invited to add to the Brad E. Yackle Scholarship Endowment by sending their contributions to the Computer Science Department, and designating the Yackle Scholarship Fund on the check or in an accompanying letter.

Remote Students Enrich Classroom Experience

Fall 2000 marked the expansion of the software engineering coursework with a new full-year capstone project sequence. Associate Professor Clark Turner kicked off the new endeavor with Requirements Engineering and Professor Dan Stearns continued the effort with two courses that focus on the design and deployment of large software systems. Critical to the success of the sequence is the partnership with "classroom clients", often its biggest challenge, but also its greatest strength.

Customers for the Fall 2000 sequence were IP Tech of San Luis Obispo, manufacturers of pre-press software for the printing industry; Airtreks, an adventure travel company in San Francisco; and St Jude/Pacesetter of Sylmar, who manufactures heart pacemakers.

Professors Turner, Stearns and Associate Dean Dan Walsh also arranged to offer this sequence to St. Jude employees at Sylmar, CA. Six qualified employees were admitted to the MS CSC program and were enrolled in Requirements Engineering. Via a two-way video connection to the software engineering class, provided by St. Jude, the remote students actively participated in the class and lab.

The St. Jude students, who included working engineers, some with more than 20 years in the field, provided a rich source of mature engineering experience for the students at Cal Poly. Conversely, by sharing their skills in using state-of-the-art techniques and tools, local students provided their St. Jude colleagues a broader perspective on software engineering.
Alumni Connections

The Computer Science Department wants to make it easier for alumni to stay connected with each other and with the department.

More than 500 computer science and computer engineering alumni have listed themselves on our alumni web page, which allows you to find each other by graduation year or last name (www.cs.calpoly.edu/alum).

Lifetime email forwarding addresses are available through Cal Poly's email "reflector" service available free to alumni (go to alumni.calpoly.edu and follow the link to "Free E-Mail Forwarding for Life").

FACULTY, CONT.

of courses in bioinformatics and biotechnology. Kearns earned his Ph.D. from University of Notre Dame. His career has included technical and management positions at AT&T Bell Labs, Hewlett-Packard, and Price Waterhouse Coopers. Some alumni may remember him from a prior appointment at Cal Poly in the 80s.

Associate Professor Franz Kurfess was drawn to Cal Poly because teaching is taken seriously here. He has added depth to the department's expertise in artificial intelligence, and specializes in knowledge organization and management, and neural networks for knowledge representation. Kurfess received his doctorate at Technical University in Munich. He came to Cal Poly from Concordia University in Montreal, Canada and also taught at New Jersey Institute of Technology.

Assistant Professor Phil Nico's specialty is languages and compilers. He came to Cal Poly from U.C. Davis, where his doctoral research is in automatic parallelization and scheduling of time-critical applications. It applies language technology and automation to make real-time system designers' lives simpler.

Associate Professor Hasmik Paulson's interests are in numerical methods and computer science theory. She completed her doctoral work in the former USSR, where she taught at Yerevan State University in the Republic of Armenia. She has continued her work on numerical solutions of integral equations. Paulson currently teaches the senior students in the theory classes.

One reason Assistant Professor Hugh Smith enjoys Cal Poly is industry's enthusiasm for the computer science and computer engineering programs. He was able to help shape the contents of the new network lab as it was being developed by Cal Poly and Cisco and now takes full advantage of the technology in his courses. He has introduced a graduate level networks course and is working on a security and network management course. Smith earned his doctorate in computer science from Michigan State University after gaining technical and management experience in industry. He is the advisor to the student chapter of ACM.

Associate Professor Clark Turner uses case studies to teach students in the Professional Responsibilities course that technical aspects are inseparable from social and ethical aspects of engineering. He also teaches a new course covering development, analysis and specification of requirements for enterprise level software systems. With a law degree from University of Maine as well as a computer science doctorate from U.C. Irvine, Turner was named CSC Professor of the Year in his first year of teaching in 1999-2000. He is the advisor for the Linux Users Group and is working with a team of engineering and computer science students and faculty to build and launch a satellite.
Alumni Updates

1970s
Robert Moss (BS CSC, 1971) is a systems and programming manager for the County of San Luis Obispo.
Weston Clark (BS CSC, 1977) is a manager of workstation administration in the IT department for PeopleSoft, Inc.
David Short (MS CSC, 1978) is a manager of professional services at Software Technologies Corporation in Redwood Shores, CA.
Barry Hills (BS CSC, 1978) manages development at Onsale.com in Menlo Park, CA.
Sue Francis (MS CSC, 1979) is a senior technical writer for Cisco Systems, Inc in San Jose, CA.

1980s
Jim Schrempp (BS CSC, 1980) started his own company, Wired Air Inc, in Saratoga, CA.
Mike Woyak (BS CSC, 1981) is a project manager for Cygnus Solutions in San Jose, CA.
Michael Benson (BS CSC, 1983) is a senior software engineer in Morgan Hill, CA.
Laurie Lew (MS CSC, 1983) is living in San Jose, CA.
Bruce Richardson (BS CSC, 1984) is a software manager at Raytheon in Vancouver, B.C.
Karen Park (BS CSC, 1985) is a mother of two and living in Temecula, CA.
Gary Visser (BS CSC, 1987) and his wife Cathi (Arnold) Visser (BS CSC, 1988) have a son and live in Pleasanton, CA.
Kimi Cousins (BS CSC, 1989) is a project manager of WebSphere in the Software Solutions Group of IBM in Apex, NC.
Hal Duncan (BS CSC, 1989) is a senior software engineer for Cisco Systems in San Jose, CA.
Nate Lawson (BS CSC 1999) presents "Network Intrusion Detection System" as part of the Computer Science Colloquium Series for Spring 2001

1990s
Marcos Della (BS CSC, 1991) is president of CSTONE Consulting, Inc in Scotts Valley, CA.
Matthew Hoang (BS CSC, 1991) is a senior manufacturer engineer of CMP division for Applied Material in Santa Clara, CA.
Timothy Thomas (BS CSC, 1993) owns Thomas Consulting Services in Chandler, AZ.
David Glaeser (BS CSC, 1994) is a senior developer of large custom software packages for the agricultural industry at John Deere, Agris-Lathrop division in Ripon, CA.
Alexander Tam (MS CSC, 1994) is a senior engineer of OTM for Nortel Networks in Santa Clara, CA.
Joel Wujanen (BS CSC, 1994) is a software design engineer for Microsoft Office in Redmond, CA.
Kenny Hom (BS CSC, 1995) is a network manager for Intraware in Orinda, CA.
Laurie Lew-McCrigler (MS CSC 1983) and Leonard McCrigler (MC CSC 1982) were urged by Professor Bob Dourson to "find a partner" in order to survive his tough compilers course. Nearly twenty years later, they observe, "He didn't tell us when to end the partnership." They were on campus for Poly Royal.
We love to hear what you're doing and where you are. Please take a moment to give us an update on your career, family, etc. Send mail to estier@calpoly.edu, or send a FAX to 805/756-2956.

If you would like to make a gift to the Computer Science Department, please send your check payable to Computer Science Department, Cal Poly, San Luis Obispo, CA 93407. Collectively, your contributions have made a real difference in the quality of our programs.

Phil Strahl (BS CSC, 1995) is an information designer of servers and peripherals for Compaq Computers in Cupertino, CA.

Cathy Eusebio (BS CSC, 1996) is a product education manager for SGI in Mountain View, CA.

Kevin Wang (BS CSC, 1996) works for Nexprise, Inc. in Santa Clara, CA.

Christopher Conely (BS CSC, 1998) is a software engineer at Intel Corp. in Sacamento, CA.

Fouzi Husaini (BS CSC, 1998) is a software engineer in the Sun Cluster group for Sun Microsystems, Menlo Park, CA.

Ryan Thoma (BS CSC, 1998) is a software engineer for IXL in Carlsbad, CA.

Brandon Wong (BS CSC, 1998) is a quality assurance engineer of quality assurance for NBC Internet in San Francisco, CA.

Darren Saxon (MS CSC, 1999) is a senior UI engineer for eBay in San Jose, CA.

David Shean (BS CSC, 1999) is a programmer for PG&E in Avila Beach, CA.

Brian Cross (BS CSC, 1998) is a VC++ Quality Assurance Engineer for Microsoft in Redmond, WA.

Jason Fox (BS CSC, 1999) is working for Hughes Research Labs in Malibu, CA.

Michael May (BS CSC, 1999) is working for Inktomi.

Eric Richardson (BS CSC, 1999) is working for Hewlett Packard in Fort Collins, CO.

Tony Wilson (BS CSC, 1999) is Senior Applications Developer for TrueLink Inc. in San Luis Obispo, CA.

Ajay Bhambani (BS CSC, 1998) is Manager of Business Development for Chipshot.com in Sunnyvale, CA.

Josh Lehan (BS CSC, 1999) is a Member of the Software Technical Staff for Splash Technology, Inc., Sunnyvale, CA.

James Loesch (BS CSC, 1998) is a Software Development Specialist for CDM Technologies.

Nate Lawson (BS CSC, 1999) has started his own firm named Root Labs.

Winnie Yee (BS CSC, 1998) is a QA engineer for Documentum, Pleasanton, CA.

Mark Townsend (BS CSC, 1998) is a Software Engineer for OrderFusion, Inc. in San Diego, CA.

Liza Gee (MS CSC, 1999) is a Technical Architect for iXL, Inc. in San Francisco, CA.

Michael Dong (BS CSC 1997) is a Member of the Technical Staff at Adobe Systems in San Jose.

Matt Wormley (BS CSC, 1995) has co-founded Experts Exchange.

Kang Su Gatlin (BS CSC, 1994) has received his PhD. and is considering teaching after a few years working in industry labs.

Doyle Raines (MS CSC, 1992) has retired from the Coast Guard and has accepted a federal appointment as the Deputy Executive Director, Air and Marine Interdiction Division of US Customs with the Treasury Department. He also plans to pursue a law degree in the DC metro area.