@csc.calpoly.edu

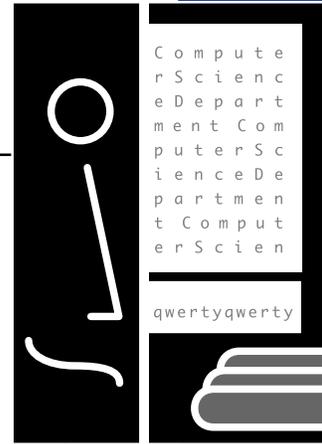Computer Science Department Computer Science Department Computer Science

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Victorious Programming Team Proves Cal Poly Best in the West

The Cal Poly programming team beat UC Berkeley, Harvard, and Harvey Mudd to capture sixth place in international competition in April. The 23rd Annual International Collegiate Programming contest was held at Eindhoven University, The Netherlands, with 62 teams from around the world competing for top programming honors. The field was narrowed from 1,457 teams in regional competitions last fall.

Computer science students **Vania Maldonado** and **Bob Mathews** and physics student **Ray Lee** were the second-highest scoring U.S. Team in the World Finals; Duke University finished one place higher, coming in fifth. The teams finishing in the top four were University of Waterloo in Ontario, Canada; Albert Ludwigs University, Freiburg, Germany; the St. Petersburg Institute of Fine Mechanics and Optics, Russia; and the University of Bucharest, Romania.

Team members worked together on one computer, racing other teams to solve problems in the shortest time with the fewest mistakes. The Cal Poly team solved five of six problems in the allotted five hours, incurring the least penalty points of the top ten finishers. *Continued page 9*

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2

New Push for Assessment Creates Opportunities for Alumni Input

The Computer Science Department invites alumni to participate in the assessment process of our undergraduate curriculum.

The Computer Sciences Accreditation Commission, which has accredited our program since 1984, will implement revised program criteria in the year 2000. The new criteria places increased emphasis on establishing and assessing program objectives and using the results to improve the program. The program must have documented objectives, including expected outcomes for graduates. The program must regularly assess its progress against its objectives and use the results of the assessments to identify program improvements and to modify the program's objectives.

For our alumni who are well-versed in such things as total quality management and continuous quality improvement, this is probably old hat. For academia, it is a new approach.

No one expects that the outcomes assessment component of the new criteria will be easy to implement, but we do expect that it will be well worth the effort. Employers, students, parents, and funding bodies all want assurance that colleges and universities are providing quality education. We want to do the best job we can of providing that quality.

As one of the constituencies identified by the department, alumni will be invited to participate in various assessment measures over the next years. This might include surveys of particular groups of alumni (for example, two years and five years out from graduation), questions directed at employers which alumni will be asked to give to direct supervisors, focus groups in selected geographic areas, and surveys of on-campus recruiters (many of whom are alumni).

If you have expertise to offer in this area and would like to be an active contributor, please contact Jim Beug at 805/756-2824, or send e-mail to jlbeug@calpoly.edu.

Unmask Your Memories - Homecoming 1999 - October 29-31
Homecoming Plans Include Computer Science Gathering

Following up on a successful gathering last fall, the Computer Science Department is planning an alumni reception in conjunction with Cal Poly Homecoming activities during Halloween weekend, October 29-31, 1999. The three-day festival includes:

- San Luis Obispo's traditional Farmer's Market (Thursday evening)
- Downtown parade (Saturday morning)
- Wine tasting and pre-game barbecue (Saturday morning)
- Football game against Portland State (Saturday afternoon)
- Department and college alumni receptions (Saturday afternoon)
- Alumni and Reunion Breakfast (Sunday morning)

The Computer Science alumni reception will be 4 to 6 p.m., Saturday, October 30, in the Computer Systems Lab in the Computer Science Building, Room 232.

CENG Honors Gary Bloom for Professional Achievement

In his eleven-year career with Oracle Corporation, Computer Science alumnus **Gary Bloom** (BS CSC 1982) has developed and marketed an impressive list of key technologies for the software giant. Now senior vice president of the System Products Division, Mr. Bloom oversees the development and marketing of Oracle's core database technology and data warehousing products. In recognition of his record of success and achievement, the Computer Science Department and the College of Engineering presented Gary Bloom with the 1999 Professional Achievement Award.

After graduating from Cal Poly in 1982 with his Bachelor's degree in computer science, Mr. Bloom worked in mainframe systems areas at IBM and Chevron Corporation. Since joining Oracle, he has served as senior vice president of the Worldwide Alliances and Technologies Division, senior vice president of the Product and Platform Technologies Division and vice president of the Mainframe and Integration Technology Division. Successful products developed under his guidance include gateways between Oracle databases and other data sources, parallel server technology for massively parallel systems, and tools and packaged applications on more than 90 hardware platforms.

Throughout his career, Mr. Bloom has maintained his relationship with Cal Poly and the Computer Science Department. He recently gave the keynote address at the Computer Science Awards Banquet and has been actively involved with other Bay Area Computer Science Alumni. We extend our congratulations to Gary Bloom for his outstanding accomplishments, and we are grateful for his continued involvement in our department and programs.

*Fellow alumni came to support Gary Bloom when he gave the keynote address at the Computer Science Awards Banquet in May. Left to right: **Janet Morris** (BS CSC 1982) , **Louis DeMartini**, **Pat Marsh** (MS CSC 1982), **Kathy DeMartini** (BS CSC 1982), J**udy Marsh**, **Gary Bloom** (BS CSC 1982), **Judy Bloom**.*

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Alums Share Experience With Computer Animation Students

Dr. Chris Buckalew's computer animation students explored exciting developments in animation production when alumni industry representatives spoke to the class about their current projects. Four recent graduates presented lectures and lab exercises, giving students hands-on experience with cutting-edge animation techniques.

Scott Peterson from PDI gave a lecture and lab on the use of statistical noise in computer graphics. **Tom Dilligan** from Digital Domain discussed Renderman shaders. **Jim Berney** from Sony ImageWorks spoke on the evolution of a shot. **Peter Palombi** from Sony ImageWorks presented on particle systems.

"Instead of the usual 'life in the real world' talk, I asked returning grads to present a lecture about a technical subject and prepare lab exercises," Dr. Buckalew said. "Students learned about innovative technologies they wouldn't have encountered otherwise, and I got lesson plans to share with future students."

Dr. Buckalew expressed his gratitude to all the speakers and said he plans to continue to invite these and other alumni to future computer animation classes.

CSC Prof Awarded Teaching Honors

He's been known to eat chalk to get their attention. Students who arrive late may be asked to dance before they take their seats. But more importantly, he's well prepared, makes interesting presentations, and explains things well. This is why Computer Science Professor **Len Myers** received one of Cal Poly's prestigious Distinguished Teaching Awards announced at Commencement in June.

Dr. Myers believes in making class time count. He spends a lot of time thinking about the methods used in the classroom, not just the material to be presented. He works hard to "make class special" so students will want to attend class every day, on time. While some of his methods may seem a little goofy, he says they help bring the class together, create a good mood, and make the class worth attending. Students in Dr. Myers' classes have no choice but to be involved.

Outside the classroom, Dr. Myers is known as a caring individual, who takes time for people who want to talk. He counts among his greatest contributions the counseling he has provided to students who want to make changes in their lives. Even parents write to thank him for his extra personal interest in their sons and daughters.

When asked if his visiting position at the U.S. Air Force Academy had an effect on his nomination and award this year, Dr. Myers hesitated. "The experience at the Air Force didn't change what I've been doing for many years," he said, "but it did affirm my beliefs and give me more confidence to do what I believe in."

Nominations for the Distinguished Teaching Award were made by alumni and students. Dr. Myers' courses were visited by five faculty and two students over the course of two quarters. Evaluators also considered written background material.

Dr. Myers has received an "Apple Polisher" designation from the Poly Reps, and a certificate for outstanding teaching from the residents of Tenaya Hall this year.

Oh, by the way. Eating chalk? It's really stick candy planted in advance in a chalk box. So far he hasn't mixed it up with the real thing.

Keeping in Touch

A Message From the Department Chair, Jim Beug

Hi,

I have really enjoyed hearing from the alumni this past year. It helps one realize that perhaps collectively we have made some difference in the world over all these years. Please do keep in contact with the department and the faculty. Your support means a lot, both to each of us personally, and to the education of the new generations as they come along.

As you will note in this issue, one of the big issues facing the department is ongoing assessment of the computer science programs so as to keep them in touch with what is happening in the field. Any feedback you can give us will be most useful. Along this line, I have asked a committee of faculty members to consider the costs and benefits of our program in software engineering, including proposing an accredited degree in that field.

I must also note the retirement of several long time members of our faculty, Professors **Patrick Wheatley** and **Ray Boche**. Both will continue to teach from time to time with us in the faculty early retirement program, however. CSL technician **Gilbert Keas** retired in December. We have also had resignations of several of our newest faculty due to the high cost of living in SLO. Also, **Alan Bell** resigned from the CSL staff to join Lucent Technologies in New Jersey.

And last but not least, a big round of applause for this year's programming team, who went all the way to the international ACM programming competition in Amsterdam, and placed 6th out of 1,457 teams that competed worldwide, and to their advisor and programming team alum, **Kathleen Luce**.

Gifts Increase CSC Buying Power

Your response to the Computer Science Department's call for financial support has been extraordinary.

Computer Science supporters increased gifts to the Cal Poly Fund by more than 53% in fiscal year 1998-99. Cash gifts designated directly to the Computer Science Department reached a record $49,994, compared to the prior year total of $32,628. The number of individuals who contributed increased from 364 to 428, with the average gift increasing from about $90 to more than $117.

As is always the case when you designate a gift to the department, one hundred percent of the contribution goes directly to the department. This last year we combined your donations with state resources to complete some much-needed upgrades, establish new labs, and host special events.

A new human-computer interaction lab has been established with 17 modern workstations.

The database laboratory received memory and hard drive upgrades to the NT network.

Equipment to establish a software engineering lab is on order.

Ailing computer projections systems were replaced by high-resolution systems in five labs.

Workstations and servers were purchased to establish two additional NT labs.

Additional laser printers for student access were purchased and placed on-line.

A digital camera, laptop computers and color printers were purchased for faculty and staff shared use.

We hosted approximately 400 potential computer science students and their families at Cal Poly's Open House in April.

Funds were allocated to support and award outstanding undergraduate research participation.

A successful colloquium series brought in nationally known speakers from industry and academia.

Thank you. We can truly say that we couldn't do it without you.

We appreciate all donations, not only for their immediate financial effect, but also as an indication that you appreciate the education and experience Cal Poly provided.

CSC Students Help Develop Web-Based Course Registration

In the ongoing effort to improve student services, Cal Poly unveiled the new Poly WEB Registration system (POWER) in March. The new system successfully processed 80,000 on-line registrations in its debut. Computer Science graduates **Scott Wehrmann** (BS CSC 1999) and **Jeff Caddel** (BS CSC 1997) were instrumental in the design and implementation of the pioneering service.

Mr. Wehrmann began his work on the POWER programming team for his senior project under Dr. **Sigurd Meldal**. Mr. Caddel and Mr. Wehrmann, coworkers at Information Technology Services on campus, collaborated with staff members from Academic Records to develop an expanded on-line service. POWER allows students to create schedules based on open class information and then complete their registration on the Web. Students in the residence halls have been testing POWER since Fall of last year. POWER is currently accessible from remote locations as well as dormitories and on-campus labs.

The Web-based registration system has proven immensely popular and analysts predict the system will receive approximately 2,000,000 hits monthly. There are already plans to extend the service to include additional information such as textbook requirements, and increased options such as the ability to make course selections by general education area.

POWER works in conjunction with the CAPTURE telephone registration system, offering students greatly expanded access to registration services and information. POWER has also reduced phone calls to Admissions and Records for simple registration queries. Now, students can find the information they need quickly and easily.

Dr. Meldal, pleased with his senior student's performance, noted, "Scott's project was essentially to put CAPTURE on the Web. And the new POWER program has been quite successful. IBM even featured it on their Web site as a Java success story."

CENG to Offer Email Reflector Service

As technology advances, we seem to rely more and more heavily on electronic communication. It's fast and it's convenient. But what happens when we graduate, change jobs, or change our network server? Suddenly, our friends and professional associates are getting electronic replies to their messages that say "returned mail - user unknown."

The College of Engineering (CENG) wants to prevent alumni from getting lost in cyberspace. As a solution, the College has taken a leadership role in helping the university establish an e-mail reflector service that will provide a permanent e-mail address for alumni's electronic mail.

In this system, each alum gets an e-mail address (also called a "vanity" address). For example, if someone named John Smith graduated in 1977, his vanity address might be jsmith77@alumni.calpoly.edu. This address would be permanent. In the future, as he moved professionally or geographically, he would merely change his current actual e-mail address to the link. Although the reflector addresses are not actual mailboxes (they do not store mail), they serve as a permanent forwarding system.

The service is scheduled to be available for all College of Engineering alumni in early Fall. Details regarding how and where to sign up will be published in the Fall issue of the College of Engineering Newsletter.

For more information on the new Reflector Service, Contact Donna Aiken, College Relations Coordinator at (805)756-5795 or via email at daiken@ calpoly.edu.

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First J.L. Moore Fellows Named

Congratulations to **Greg Hamerly** (MS CSC 1999) and **John Bellardo** (MS CSC 1999), winners of the first J. L. Moore Fellowships for doctoral study in computer science. A committee of Computer Science Department faculty selected these outstanding students based on academic achievements and professional goals.

The J. L. Moore Fellowships were established to address the nationwide shortage of computer science Ph.D. candidates. Undergraduate students often decide against doctoral study, weighing their immediate income potential against the time and cost of graduate school. The fellowships offer students the opportunity to attend the doctoral program of their choice and to focus their time and energy on their studies. Both fellowship recipients said they are grateful to be able to pursue their degrees without constant concern over funding.

Mr. Bellardo was drawn to further study through his varied experiences interning at several corporations and working as a Teaching Associate for the Computer Science Department. "I realized I enjoyed doing theory and research," Mr. Bellardo said. "I'm interested in pursuing knowledge and sharing it with others." Mr. Bellardo plans to focus on distributed computing and parallel processing. He is keeping his employment options open:"I like teaching, but I may do corporate research and development."

Mr. Hamerly also expressed the desire for deeper learning: "I feel like there is more that I can learn about computer science in an academic setting." Mr. Hamerly plans to work in numerical analysis and distributed computing. Though he says he may teach, he is currently leaning more toward industry.

Dr. Elmo Keller, chair of the graduate committee, expressed great confidence in the new fellows: "These students are excellent programmers and software developers. They have outstanding academic records and have shown great promise as computer scientists."

Both students will attend the University of California at San Diego.

CSC Undergrad Selected for Prestigious NSF Fellowship

This summer, Computer Science senior **Scott Perry** took a working vacation. He was one of 14 undergraduate students from across the country selected by the National Science Foundation for their annual Research Experience for Undergraduates Fellowship. The chosen students spent more than eight weeks working closely with faculty and graduate students of the University of Iowa with full access to their state-of-the-art computing laboratories.

Mr. Perry expanded research begun as part of his senior project under Professor **Erika Rogers**. Working on a team with two other Cal Poly students and Professor **Lew Hitchner**, Mr. Perry is designing a sophisticated freeway driving simulation. The program uses artificial intelligence to simulate traffic that behaves like actual freeway traffic, responding to virtual world conditions. Unlike the driving simulators used for games, the "Virtual

Programming Team, *continued*

The team credits its success to the careful coaching of volunteer **Kathleen Luce**, an operating systems analyst in the university's Information Technology Services division. As a Cal Poly student in 1994, Ms. Luce was on Cal Poly's only other programming team to make it to international finals. She ran the team through rigorous practice sessions simulating problems and time constraint. Ms. Luce recognized that the structure of these competitions emphasizes teamwork. "The limitation of only one computer per team, and the sheer difficulty and number of problems, make teamwork a requirement for doing well," she said.

Each of the three students performed a particular function on the team. Mr. Lee read the problems, deciding which could be most readily solved, and discussed possible solutions with Mr. Mathews, who did all the coding at the keyboard. Ms. Maldonado wrote test cases for Mr. Mathews' code, working out glitches in the solutions before the team submitted them to the judges.

Reaching solutions quickly and efficiently meant determining the relevant information from the misleading teasers that contest designers had deliberately buried in the problems. Accurate solutions produced correct output in the specified format within a 180-second run-time limit. Problem sets included measuring the shortest distance between any two compartments in a honeycomb and calculating the smallest amount of trees that should be cut down to build a fence around the remaining trees.

Several hours of nonstop programming under constant pressure culminated in victory for the Cal Poly trio as the announcer called the winning teams. When Mr. Lee heard announcements for Harvard for eighth and UC Berkeley for seventh, he was deeply disappointed. "I thought, We didn't make it at all." But the Cal Poly team came out on top, beating Berkeley by a full eight minutes.

Once word of their accomplishment spread, the team was surrounded by ongoing publicity and celebration. "A lot of people know me either by sight or by name because of the competition," Ms. Maldonado said ,"And my mom can't stop bragging about me and mentioning how we beat Berkeley and Harvard." Neither can we!

For further information on the ACM programming contest, visit http://acm.baylor.edu/acmicpc. The site includes final standings, a photo album and the problem set.

Environment Car Simulator" (VECS) provides realistic, random situations driven by a fractal road generation algorithm.

Mr. Perry hopes that his project will have potentially life-saving applications. "Originally we were thinking of a race car simulation," he said, "but a friend of mine was involved in an accident that might have been avoided if he had been trained to respond in an emergency situation." Iowa's existing Hank Driving Simulator is geared more toward city driving, but police officers and others can use VECS to gain emergency freeway driving experience.

While at the University of Iowa, Mr. Perry participated in full-time research.

Alumni Updates

Jennifer Jacobi (BS CSC 1992) currently works for Amazon.com in multiple capacities as manager, engineer and software developer. She lives in Seattle, WA.

Jodi (Rubenstein) Muirhead (BS CSC 1986) is now a Senior Systems Consultant at Edify Corporation. She and her husband **Richard Muirhead** (BS CSC 1986) are happily raising their six-year-old twins in Santa Clara, CA.

Adrian Hicks (BS CSC 1994) is a system engineer for Computer Consultants, an Arizona-based firm. He and his wife **Pamela Ryan-Hicks** (BIO 1993) and their three children live in Gold Canyon, AZ.

Dan Andresen (MS CSC 1992) received his Ph.D. in computer science from UC Santa Barbara with his dissertation entitled "SWEB++: Distributed Scheduling and Software Support for High Performance WWW Applications." Dr. Andresen is now an assistant professor in the Department of Computing and Information Sciences at Kansas State University. His fiance, Rachel Aberle, is a high school English teacher; the couple plans to marry this June.

Sheri Wright (BS CSC 1986) lives in Superior, Colorado, where she is a senior software engineer for StorageTek. Her family celebrated the birth of their second son Derek in January of last year.

Weston Clark (BS CSC 1977) is Manager of Application Technology at Peoplesoft's IT division. He makes his home in Castro Valley, CA.

Christine Chau (BS CSC 1995) manages the Ad Sales Systems group at Excite. The group is responsible for all advertising and sponsorship related systems for the Sales and Partner Services Department including the Sales Forecasting System, Media Entry System, Order Entry System and Online Reporting System. She leads a team of engineers and analysts in meeting the business goals established by our engineering team, the product manager, and the internal customers.

Joe Martinez (BS CSC 1996) married **Alana Hall** (MATE 1995) in October of last year. The couple now lives in San Jose where he works as a computer engineer for IBM and she is a Standards Engineer at SEMI.

Wilf Kurth (BS CSC 1982) worked three years in the Bay Area after graduating before moving to San Diego where he has spent the last twelve years working in research and development. In the meantime, one of his sons graduated from Cal Poly with a minor in Computer Science and got a job in the computer industry at a starting wage of $43,000. Mr. Kurth says: "Wow, Cal Poly must be doing a really great job!"
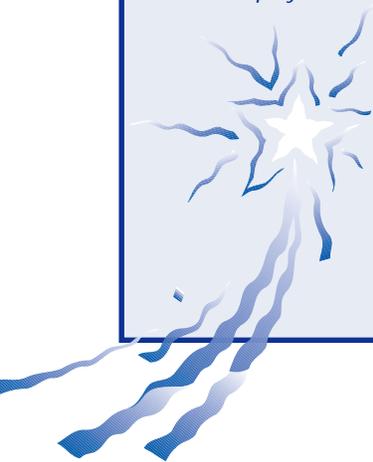
Don Welch (MS CSC 1987) earned a Ph.D. in Computer Science from the University of Maryland College Park in May 1998, and was promoted to Associate Professor at the United States Military Academy at West Point in August 1998. Dr. Welch teaches software engineering in the Department of Electrical Engineering and Computer Science at USMA where he is also the Computer Support Group Director, overseeing the Departmentís computer resources. His research focuses on software engineering of distributed simulations and software engineering education.

Jeff Kirby (Minor CSC 1995) is teaching high school mathematics in Lynnwood, Washington.

Kuuipo Burleigh (BS CSC 1991) has moved to Anchorage to work as a software consultant for the Bureau of Land Management. She also enjoys working as a docent at the Alaska SeaLife Center.

Kenny Hom (BS CSC 1995) was promoted to senior software engineer at Northern Telecom. He currently resides in Campbell, California.

William Woo (BS CSC 1974) has been promoted to director of engineering, Internet and embedded software, at Hewlett-Packard in Cupertino.

Bruce Naylor (BS CSC 1985) was recently honored by IBM for his work on Information Management System Version 6.1. He lives in Morgan Hill, California

Michael Benson (BS CSC 1983) is a senior software engineer. He married **Rose Formento** (PSYCH 1981), and they make their home with their two children in San Jose, California.

Joshua Lehan (BS CSC 1999) is living in San Jose, California.

Patrick Miller (MS CSC 1987) now has a Ph.D. and is a group leader at Lawrence Livermore National Laboratory.

Karen (Heinzen) Park (BS CSC 1985) lives in Temecula, California, where she is the mother of two children and is active in PTA and community associations.

Brett Nelson (MS CSC 1976) is Director of Engineering at Logos Systems Int'l in Scotts Valley, California. He is currently consulting in the field of electronic imaging.

CSC Graduates Command Top Salaries

Cal Poly Computer Science students are in higher demand than ever before, and their starting salaries prove it. Computer Science graduates topped Cal Poly's 1997-98 Graduate Status Report with a median monthly starting salary of $4,100. This is an increase of $350 over last year, making Computer Science students the most highly paid Cal Poly graduates.

Reported starting salaries for Bachelor's degrees in Computer Science ranged from $2917 to $6000, including both full and part-time positions. Job titles include Software Design Engineer, Software Test Engineer, Network Systems Administrator, Game

Programmer and Senior Software Engineer. Major employers include Hewlett-Packard, Seagate Software, Documentum, 3Com and Adobe. Master's degree students reported starting salaries in the $5000 range for job titles including Software Systems Engineer, Software Engineer and Professor of Computer Science.

Nearly all of the graduates responding live in California, and, continuing the trend from last year, more graduates are gaining employment locally in such companies as Seagate Software and Ziatech. One-third of graduates found jobs in San Luis Obispo, reflecting industry growth in this area.
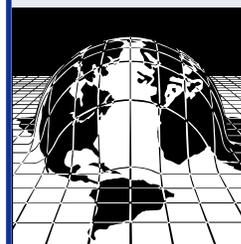
Let's Keep In Touch!

It has been great to hear from so many of you, whether it has been in person, by electronic or regular mail, or by seeing your information appear on our alumni web page.

If you put it off last time, the questionnaire on the back page gives you another chance to tell us about yourself and what we can do for you. You can fax, email, mail or use the web page!

www.csc.calpoly.edu/~alum

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. Fill out the form below and mail, or if it's easier, use the form as a guide and send e-mail to estier@calpoly.edu. You can also FAX to 805/756-2956.

If you would like to make a gift to the department, please complete the Contribution section and return it with a check payable to the Computer Science Department. Collectively, your contributions have made a real difference in the quality of our programs. (See related article on page 6.)

Name _____

Year of Graduation _____   BS or MS (circle)

Employer _____ Job Title _____

Current Computer Science Activities

Personal News for Friends

Don't forget to join almost 400 alums who have listed themselves on the Computer Science Alumni web page at http://www.csc.calpoly/edu/~alum.

Contribution

Please accept my contribution in support of (select one below), in the amount of $_____

    (Specify)

_____ General support of the Computer Science Department (Fund 75900)

_____ Computer Science Scholarships (Fund 7-47710)

_____ Computer Science Student System Administrators –Lab Rats (Fund 65830)

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