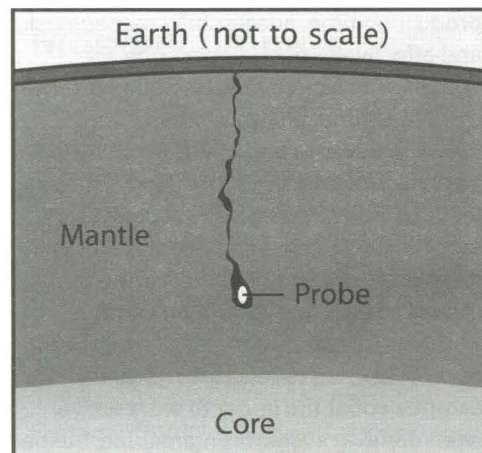


The campus community biweekly

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Probe to Earth's core is feasible

Dave Stevenson has spent his career working on "swing-by" missions to the other planets. Now he has a modest proposal he'd like to swing by a government agency with a few billion dollars in available funding.

According to Stevenson's calculations, it should be possible to send a probe into Earth's core by combining several proven technologies with well-grounded scientific assumptions about the workings of the planet. The probe would sink straight to the core in an envelope of molten iron, sending back temperature readings, compositional information, and other data along the way. Stevenson's paper, "A Modest Proposal," appeared this month in the journal *Nature*.

"We've spent more than \$10 billion in unmanned missions to the planets," says Stevenson, the Van Osdol Professor of Planetary Science. "But we've only been down about 10 kilometers into our own planet."

The benefits to science would be significant, he says, because so little has been directly observed about the inner workings of the planet. Scientists do not

see *Probe*, page 5

Three faculty named to AAAS

Caltech professors Fred Anson, Colin Camerer, and Joseph Kirschvink have been elected as 2003 fellows by the American Academy of Arts and Sciences. Their appointments bring to 82 the number of Institute faculty named to the academy.

"It gives me great pleasure to welcome these outstanding and influential individuals to the nation's oldest and most illustrious learned society," said academy president Patricia Meyer Spacks, noting that the honor "acknowledges the best of all scholarly fields and professions." The "highly competitive"

see *AAAS*, page 6

Commencing life after Caltech

For more than a century, Caltech students have gathered for an annual rite of passage, marking their transition into the world beyond. This year, the Institute's 109th such ceremony will take place on Friday, June 13.

Commencement 2003 will begin at 10 a.m. on the Beckman Mall. Campus visitors can take advantage of overflow parking and shuttle service, available that day from 8 a.m. to 3 p.m. at the Huntington Library, 1151 Oxford Road, San Marino. The ceremony will feature keynote speaker Harold Varmus, president and chief executive officer of Memorial Sloan-Kettering Cancer Center. A former director of the National Institutes of Health, Varmus was a corecipient of the 1989 Nobel Prize in physiology or medicine for research that has led to a deeper understanding of cancer cell growth.

Leading up to the main event will be an array of traditional precommencement activities that offer graduating students a chance to celebrate with visiting family and friends, starting Thursday, June 12. Visitors can take self-guided campus tours throughout the day, available from 8 a.m. to 5 p.m. at the Office of Public Relations, 315 South Hill Avenue. The day's events will also include a reception for graduates

see *Commencement*, page 5

Sofa surfing



A Caltech underclassman gets busy on the davenport on Ditch Day 2003, which took place on Thursday, May 22. Water guns, go-carts, and a streaker or two marked the day the campus was deserted by seniors, who left behind puzzles known as "stacks," to be solved by freshmen, sophomores, and juniors.

Student Affairs gets restructured

Order comes to a plate-glass universe

Caltech Student Affairs has been reorganized in order to streamline services and to help the organization achieve its budgetary goals. Announced by Vice President for Student Affairs Margo Marshak in a May 13 memo to students, the changes include closure of the Residence Life office, enfolded International Student Programs' immigration and counseling functions into Human Resources' Office of International Scholar Services, and elimination of the associate dean for graduate studies position.

The restructuring and loss of employees surprised some students, who perceived the changes as abrupt and secretive. According to Marshak and Stan Borodinsky, chief administrator for student affairs, though, such decisions had been pending for some time and were not made lightly.

"These changes were done very thoughtfully to consolidate and tighten services and to meet financial goals. These are decisions that one never wants to make," Marshak said. "We are sad to have to do it and to lose people valued by us and by students. It's a real tribute to our staff that students feel that they've made such a difference and are sad to have them go, as we are."

Due to the sensitive nature of layoffs, she did not mention employees by name in her memo, which may have given an impression of secrecy and of clinical detachment. However, Marshak said, the actual process with the staff members was far different. "We've worked very hard to make this as humane as possible. Lots of thought was given to how to help affected staff make the transition, both those who are leaving and those staying." Employees who have lost jobs have been given time in which to make the transition, as well as benefits and various kinds of assistance.

"We've all known these changes were coming," Borodinsky said. The centralization of International Student Programs' (ISP) immigration function under International Scholar Services (ISS) "has been under discussion for the past six or seven years; it's not something that came up all of a sudden." In addition, he said, a group of consultants who visited campus in early 2002—the committee that advised hiring a full-time vice president for student affairs, resulting in Marshak's arrival—had also recommended administrative restructuring.

see *Student Affairs*, page 6

In a matter of weeks, Jean Mueller and her team of volunteers rearranged the stars, aligned the celestial bodies, and imposed a cosmic logic on the whole mess.

They found the Milky Way in a box and put it back in its proper place. They wiped the dust off the Orion Nebula and hung Orion's belt back on its cosmic hook. No red giant was too massive; no brown dwarf was too small. Not even comets, trailing their resplendent tails, could shoot across the sky fast enough to escape.

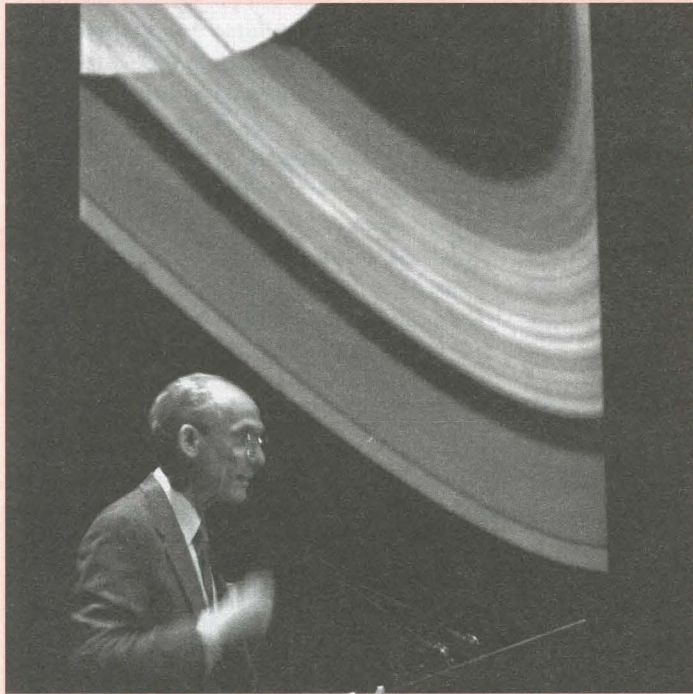
Mueller, along with a team of volunteers, set about the awesome project to clean up the plate archive in the subbase-ment in Robinson last winter.

"The plate vault was in disarray. It was a mess down there," says Mueller, who operates the 200-inch telescope on Palomar Mountain. "In recent years, there hadn't been a lot of attention paid to them."

The glass plates, large photographic negatives exposed on Palomar's 48-inch Schmidt telescope (known as the Oschin Telescope since the 1980s), had been accumulating since 1949. Over 15 years, Mueller exposed hundreds of plates herself for a sky survey. In all, she estimates that some 40,000

see *Mueller*, page 6

NewsBriefs



Ed Stone, Caltech's Morrisroe Professor of Physics and a former director of JPL, discussed "Voyager's Search for the Edge of Interstellar Space" as the Seminar Day 2003 general session speaker on May 17.

Personals

Welcome to Caltech

May

Enrico Campagna, visitor in physics; **Sherwin Chen**, assistant animal lab technician, Office of Laboratory Animal Resources; **Maria Esplandiu**, postdoctoral scholar in chemistry; **Friedrich Forster**, visitor in biology; **Jeffrey Gralnick**, Texaco Postdoctoral Scholar; **Kelly Jung**, graduate office database coordinator, Office of the Dean of Graduate Studies; postdoctoral scholars **Mitsuhiko Kurusu** and **Pingwei Li**, both in biology; **Aileen Liu**, administrative assistant, Treasurer's Office; postdoctoral scholars **Manish Raizada**, in biochemistry, and **Sebastian Smidt**, in chemistry; **Diana Stoianova**, visitor in chemistry; **Dai Watanabe**, postdoctoral scholar in biology; **John West**, security officer, Campus Security and Parking Services.

Retirements

Barbara Barth, who provided staff support for the Kerckhoff Marine Biological Laboratory, will retire on July 1, after 25 years at Caltech.

David Tennant will retire on July 1. An instrument technician at Palomar Observatory, he will have been with Caltech for 23 years.

Robert Townsend, a section gardener for Athletics, will retire on July 1, after 39 years at Caltech.

Honors and awards

Donald Helmberger, Smits Family Professor of Geophysics and Planetary Sciences and director of the Seismological Laboratory, has been awarded the 2002 Medal of the Seismological Society of America. The award is "given to persons for outstanding contributions in seismology and earthquake engineering who are distinguished for their attainments in seismology or related sciences, or for their service to the profession or the Society." Helmberger received his PhD from UC San Diego in 1967 and has been a member of the Caltech faculty since 1970, director of the Seismo Lab since 1998, and Smits Family Professor since 2000.

Anneila Sargent, professor of astronomy and director of both the Owens Valley Radio Observatory and the Interferometry Science Center, has been selected for the 2003 George Darwin Lectureship of the Royal Astronomical Society. A graduate of the University of Edinburgh who received her PhD from Caltech in 1977, Sargent has served as a member of the Institute's research faculty or professional staff ever since, being appointed professor in 1998, director of the Owens Valley Radio Observatory that same year, and director of the Interferometry Science Center in 2000.

Caltech wins four medals of excellence

The Council for Advancement and Support of Education (CASE) has honored Caltech with four medals as part of the council's 2003 CASE Circle of Excellence Awards Program.

Caltech's campaign video, "Infinite Possibilities," won a silver medal in the category of Video Fund-Raising Features. Out of 34 entries, two received gold medals and three silver.

The Institute's campaign casebook, *There's only one. Caltech*, garnered two medals, a gold for Visual Design in Print and a silver for Individual Development Publications—Case Statements/General Cultivation Publications that Make the Case for Giving. The former category received 135 entries, of which three won gold medals and three silver, while in the latter category one gold medal and three silver were awarded in a field of 49 entries.

Finally, Caltech's *Annual Report 2001–2002* captured a bronze medal in the category of Institutional Relations Publications. Of the 124 entries in this category, one received a gold medal; two, silver medals; two, bronze medals; and four, honorable mentions.

The video and both publications were produced by Caltech's Office of Public Relations.

Caltech students awarded Goldwater Scholarships

Po-Shen Loh, a junior math major from Madison, Wisconsin; **Victor Tsai**, a junior geophysics major from Albany, California; and **Joseph Wasem**, a sophomore physics major from Pullman, Washington, have each been selected to receive Barry M. Goldwater Scholarships for the 2003–04 academic year.

The Barry M. Goldwater Scholarship and Excellence in Education Foundation awards these academic merit scholarships to undergraduate sophomores and juniors from across the nation. The recipients were chosen from 1,093 mathematics, science, and engineering students who were nominated by the faculties of colleges and universities nationwide. The one- and two-year scholarships will cover the cost of tuition, fees, books, and room and board, up to a maximum of \$7,500 per year.

A federally endowed agency, the Goldwater Foundation established the scholarship program in honor of the late Senator Barry M. Goldwater, with the goal of encouraging outstanding students to pursue careers in the fields of mathematics, the natural sciences, and engineering.

Six awarded Sloans

Six Caltech professors recently received Alfred P. Sloan Research Fellowships for 2003. They are **Paul Asimow**, assistant professor of geology and geochemistry; assistant professors of chemistry **Linda Hsieh-Wilson**, **Jonas Peters**, and **Brian Stoltz**; **Danny Calegari**, associate professor of mathematics; and **Athanassios Siapas**, assistant professor of computation and neural systems. Each Sloan Fellow receives a grant of \$40,000 for a two-year period.

"It is a terrific honor to receive this award and to be a part of such a tremendous tradition of excellence within the Sloan Foundation," says Stoltz, who is exploring ways to create antileukemic drugs from a yew tree.

Asimow says that he will use his Sloan Fellowship to "support further investigation into the presence of trace concentrations of water in the deep earth." Of his research, Peters says that "the Sloan award will provide invaluable seed money for work we've initiated in the past few months regarding nitrogen reduction using molecular iron systems."

The unrestricted grants are awarded to young researchers in physics, chemistry, computer science, mathematics, neuroscience, computational and evolutionary molecular biology, and economics, enabling them to pursue diverse fields of inquiry and to establish independent research projects at a pivotal stage in their careers. Sloan Fellows are selected on the basis of "their exceptional promise to contribute to the advancement of knowledge."



Pickering honored in homeland

William Pickering, Caltech alum and professor of electrical engineering, emeritus, and a former director of JPL, recently returned to his native New Zealand to receive an honorary doctorate of engineering from the University of Canterbury. He had studied there for a year before transferring to Caltech. Pickering also unveiled a memorial honoring fellow scientist Ernest Rutherford and himself in the town of Havelock, where both men attended primary school.

After receiving his BS in 1932 and his PhD in 1936, Pickering joined Caltech's faculty as an instructor, becoming an assistant professor in 1940, an associate professor five years later, and a professor in 1947. As director of JPL from 1954 to 1976, he became a central figure in America's space race with the Soviet Union. During his tenure, the Lab developed the first U.S. satellite, Explorer I, in 1957; the first successful U.S. circumlunar space probe, Pioneer IV; the Mariner flights to Venus and Mars and the Ranger photographic missions to the moon in the early and mid 1960s; and the Surveyor lunar landings in 1966 and 1967. Pickering retired from Caltech in 1979.

Caltech noted in Marshall School improvement award

Pasadena's Marshall Fundamental Secondary School, one of three high schools nationwide to receive a College Board 2003 Inspiration Award for improvement, was cited for "exemplary work in helping students from disadvantaged backgrounds achieve the promise of higher education." In addition to the school's rigorous curriculum and supportive teaching staff, Marshall's nearly 100 percent graduation rate and almost 70 percent college admittance rate were partly credited to Marshall's participation in Caltech's Cultural Expedition and Junior Watson programs. "College comes to life when the students visit the nearby California Institute of Technology," the award mention reads. **Denise Nelson Nash**, director of Caltech Public Events, says that Marshall has been involved in the two programs since 1998, with about 160 to 200 students taking part each year.

Engineering better ways to produce

Caltech's Industrial Relations Center, though relatively unknown on campus, has become a heavyweight in the world of executive education, with its focus on technology-oriented companies. Recently, recognizing the increasing need for companies to stay competitive, the IRC has developed a new emphasis for helping companies design the best production systems and methods to maximize their efficiency.

The Systems Engineering Center offers customized training and certificate programs on-site at companies to assist technical professionals. By enhancing their capabilities, the center aims to help systems engineers reduce their organizations' production time, successfully manage risk, and effectively meet client needs. Examples of topics covered include performing a functional analysis, conducting technical reviews and audits, and managing system costs and scheduling. The center is also developing an executive-level program in systems engineering that will be offered as part of the IRC's array of management classes here on campus.

Anne Campbell, director of programs, says, "We want to raise awareness on campus about the in-depth work we've been doing in systems engineering," especially awareness among faculty and students who may be particularly interested.

The program's technical director is Joel Sercel, a Caltech alum (MS '87, PhD '93), lecturer in aeronautics, and director of the Laboratory for Spacecraft and Mission Design. Other program leaders include alums Kent Frewing (BS '61) and Pete Theisinger (BS '67) and JPL's Tony Freeman, manager of the mission and systems architecture section, and Steve Wall, who heads the Center of Excellence for Space Mission and Design.

Networking with other organizations is also a goal of the center, says Campbell, such as its involvement in a conference sponsored by the Los Angeles chapter of the International Council on Systems Engineering. "Systems Engineering: Achieving Quantum Improvements," to be held June 7 in Long Beach, will feature Erik Antonsson, Caltech professor of mechanical engineering and chief technologist at JPL, as guest speaker. More information is online at www.incose-la.org, or contact Dennis Schwarz at (562) 593-9745 or dennis.c.schwarz@boeing.com.

For more information on the Systems Engineering Center, call Campbell at ext. 4046, e-mail cstprg@caltech.edu, or visit www.irc.caltech.edu.

Wine-tasting benefits kids' center

Enjoy an evening of wine and jazz under the stars at the Child Education Center's 14th Annual Wine-Tasting Benefit, set to begin at 6:30 p.m. on Saturday, June 21. The Mediterranean-style setting of Avery House will provide a relaxed ambience for guests to experience fine wines, great food, and live jazz by the Chad Edwards Quartet. Guests may also bid on unique auction items and take their chances at the gaming tables. All proceeds from the evening will directly benefit the nonprofit organization, which has provided high-quality child-care and educational outreach services since 1979. Tickets for this event are \$35 for general admission and \$65 for the connoisseur level, and may be purchased at the event for an additional \$10 each. For tickets and further information, call (818) 354-3418.

June 2–22, 2003

Σ τ Σ τ L S S

Monday, June 2

Geological and Planetary Sciences Kliegel Lecture

155 Arms, Robert Sharp Lecture Hall, 4 p.m.—“A Lunar Field Geologist’s Perspective: 30 Years Later,” Harrison H. Schmitt, former NASA astronaut. Information: www.gps.caltech.edu.

Thesis Seminar

106 Spalding Lab, Hartley Memorial Seminar Room, 4 p.m.—“Laboratory Evolution of Cytochrome P450 Peroxygenase Activity,” Patrick Cirino, graduate student in chemical engineering, Caltech.

Applied and Computational Mathematics Colloquium

101 Guggenheim Lab, Lees-Kubota Lecture Hall, 4:15 p.m.—“Long-time Dynamics of the Nonlinear Atomic Chain Fifty Years after Fermi, Pasta, and Ulam,” Gero Friesecke, department of mathematics, University of Warwick, England. Refreshments, 3:45 p.m. Information: www.acm.caltech.edu/colloq.shtml.

Information Sciences Seminar Series

070 Moore, 4:30 p.m.—“Polynomial Time Algorithms for Network Information Flow,” Peter Sanders, Max-Planck-Insitut für Informatik. Information: <http://netlab.caltech.edu/seminar>.

Tuesday, June 3

Thesis Seminar

106 Spalding Lab, Hartley Memorial Seminar Room, 10 a.m.—“Expanding the Synthetic Capacity of the Aminoacyl-tRNA Synthetases,” Pin Wang, graduate student in chemical engineering, Caltech.

Thesis Seminar

Beckman Institute auditorium, 1:30 p.m.—“Radical Formation and Electron Transfer in Biological Molecules,” Jeremiah E. Miller, graduate student in chemistry, Caltech.

Chemical Engineering Special Seminar

106 Spalding Lab, Hartley Memorial Seminar Room, 2 p.m.—“Origins of Speckles and Slow Dynamics of Polymer Gels,” Professor Chi Wu, department of chemistry, Chinese University of Hong Kong. Information: www.che.caltech.edu/calendar/seminars.html.

Institute for Quantum Information Seminar

74 Jorgensen, 3 p.m.—“Quantum Information and Special Relativity,” Daniel Terno, Perimeter Institute.

Chemical Physics Seminar

147 Noyes, Sturdivant Lecture Hall, 4 p.m.—“Collision-Induced Light Emission as a Thermometer for Electronic Deformation,” Professor Raphael Levine, UCLA and Institute of Chemistry, Hebrew University.

Wednesday, June 4

Mathematical Physics Seminar

351 Sloan, noon—“Dispersive Estimate for Schrödinger Operators with a Potential,” Wilhelm Schlag, associate professor of mathematics, Caltech. Information: www.math.caltech.edu/events/mathphys.html.

Thesis Seminar

147 Noyes, Sturdivant Lecture Hall, 3 p.m.—“Amino Acid Radicals in Rhenium-Modified Copper Proteins,” William Wehbi, graduate student in chemistry, Caltech.

Astronomy Colloquium

155 Arms, Robert Sharp Lecture Hall, 4 p.m.—Topic to be announced. Re’em Sari, Sherman Fairchild Senior Research Fellow in Astrophysics, Caltech. Information: www.astro.caltech.edu/~gma/colloquia.html.

Information Sciences Seminar Series

070 Moore, 4 p.m.—Topic to be announced. Edmund Yeh, assistant professor of electrical engineering and computer science, Yale University. Information: <http://netlab.caltech.edu/seminar>.

Thursday, June 5

Chemical Engineering Seminar

106 Spalding Lab, Hartley Memorial Seminar Room, 2 p.m.—“Engineering of Polymeric Gene Delivery Vectors: Mechanisms of Intracellular Trafficking,” Professor Daniel W. Pack, department of chemical and biomolecular engineering, University of Illinois, Urbana-Champaign. Refreshments, 113 Spalding Lab, 3 p.m. Information: www.che.caltech.edu/calendar/seminars.html.

Biophysics Lecture Series

153 Noyes, Sturdivant Lecture Hall, 4 p.m.—“Protein Mechanics Probed by Single Molecule Force Spectroscopy,” Professor Julio M. Fernandez, biological sciences, Columbia University. Refreshments, 3:45 p.m.

Friday, June 6

Inorganic-Organometallics Seminar

151 Crellin, 4 p.m.—“Driving Force Dependence of Electron Transfer Rate Constants at ZnO/Liquid Contacts,” Tom Hamann, graduate student in chemistry, Caltech.

Saturday, June 7

Caltech/MIT Enterprise Forum Spotlight Series Program

Beckman Institute auditorium, 7:45 a.m. to 12:30 p.m.—IP and Human Capital Workshop. Details and registration information to be announced. Visit the Enterprise Forum at www.entforum.caltech.edu.

Tuesday, June 10

Chemical Physics Seminar

147 Noyes, Sturdivant Lecture Hall, 4 p.m.—“Organic Aerosols, Free Radicals, and the Fate of the Earth,” Professor Barney Ellison, department of chemistry and biochemistry, University of Colorado, Boulder.

Thursday, June 12

Herbert Newby McCoy Award Seminar

153 Noyes, Sturdivant Lecture Hall, 3 to 3:30 p.m.—“Electrochemical Sensors Based on DNA-Mediated Charge Transport Chemistry,” Elizabeth Boon, postdoctoral fellow in chemistry, Caltech.

Herbert Newby McCoy Award Seminar

153 Noyes, Sturdivant Lecture Hall, 3:30 to 4 p.m.—“Luminescent Probes for Heme Enzymes,” Alexander Dunn, graduate student in chemistry, Caltech.

Herbert Newby McCoy Award Seminar

153 Noyes, Sturdivant Lecture Hall, 4:15 to 4:45 p.m.—“Molecular Mousetraps,” Ryan Julian, graduate student in chemistry, Caltech.

Herbert Newby McCoy Award Seminar

153 Noyes, Sturdivant Lecture Hall, 4:45 to 5:15 p.m.—“In Vitro Selection of mRNA Display Libraries Containing Unnatural Amino Acids,” Shuwei Li, postdoctoral fellow, University of Texas Southwestern Medical Center.

Von Karman Lecture Series

JPL, von Karman Auditorium, 7 p.m.—“SIRTF: The Last of the Great Observatories,” Dr. Michelle Thaller, astronomer, Space Infrared Telescope Facility, JPL. Admission is free. Information: www.jpl.nasa.gov/lecture.

Friday, June 13

109th Annual Commencement

Beckman Mall, 10 a.m. to noon.

Von Karman Lecture Series

Pasadena City College, 1570 E. Colorado, the Vosloh Forum (south of Colorado on Bonnie), 7 p.m.—“SIRTF: The Last of the Great Observatories,” Dr. Michelle Thaller, astronomer, Space Infrared Telescope Facility, JPL. Admission is free. Information: www.jpl.nasa.gov/lecture.

Saturday, June 14

Caltech/MIT Enterprise Forum

Baxter Lecture Hall, 7:45 a.m. to 12:30 p.m.—“Computation Outlook.” Program details to be announced. Fee: \$40; \$10 for full-time students with ID; Caltech students and faculty free. Registration and information: 395-3916 or entfor@caltech.edu. Visit the Enterprise Forum at www.entforum.caltech.edu.

Tuesday, June 17

USGS Public Lecture Series

Baxter Lecture Hall, 8 p.m.—“Do Faults Talk to Each Other?”, Dr. Greg Anderson, research scientist, U.S. Geological Survey. Information: <http://pasadena.wr.usgs.gov/info/lectures>.

CampusEvents

Monday, June 2

Child Educational Center Summer Camp Sign-Up

Enrollment is open through June 20 for the CEC's Summer Camp Program for children completing kindergarten through 6th grade. Caltech and JPL families have priority enrollment. Information: (818) 354-3418 or www.ceconline.org.

NEURO: An Art and Science Collaboration

Works by six contemporary artists, who drew on the technology resources of Caltech and the knowledge of Center for Neuromorphic Systems Engineering (CNSE) scientists, will be on display in the Athenaeum lobby and at the Art Center College of Design's Williamson Gallery through June 29. Admission is free. Information: www.artandscience.us.

Baby Furniture and Household Equipment Pool

234 S. Catalina, 10 a.m. to 12:30 p.m.—Loans of kitchen and household necessities and baby furniture are made to members of the Caltech community. Information: 584-9773.

Ceroc Dance Lessons

Winnett lounge, 7:30 to 9 p.m.—Ceroc is a hip, international dance club sensation. This is a series of 10 weekly classes sponsored by the Ballroom Dance Club. The series began March 31. No experience is required. Fee: \$1; free for freshmen, first-year graduate students, and those taking the class for PE credit.

Tuesday, June 3

Caltech Tai Chi Club

Winnett lounge, 7 p.m.—Meets Tuesdays and Fridays weekly. Sessions are free. Information: www.its.caltech.edu/~taichi.

NEURO Art Exhibit: Public Lecture and Panel Discussion

Beckman Institute auditorium, 7:30 to 9 p.m.—“Issues at the Intersection of Art and Science” will be the topic discussed by a panel to include *NEURO* artist Simon Penny, professor of arts and engineering, UC Irvine; Jill Andrews, assistant to the provost for educational outreach, Caltech; Stephen Nowlin, *NEURO* curator and director of the Williamson Gallery at the Art Center College of Design; and David Kremers, conceptual artist in biology, Caltech. Admission is free. *NEURO* information: www.artandscience.us.

Wednesday, June 4

Baby Furniture and Household Equipment Pool

234 S. Catalina, 10 a.m. to 12:30 p.m.—Loans of kitchen and household necessities and baby furniture are made to members of the Caltech community. Information: 584-9773.

American Smooth-Style Dance Lessons

Winnett lounge, 7:30 p.m.—An assortment of popular American smooth-style dances, including the fox-trot, tango, and waltz, taught by a professional instructor. This is a series of nine weekly classes, sponsored by the Ballroom Dance Club. No previous experience is necessary. Fee: \$6 per class for Caltech students, \$8 per class for others, with a discount for full payment in advance. The series began April 9.

Dance Team Quickstep Classes

Winnett lounge, 9:30 p.m.—Four weeks of quickstep, taught by a professional instructor. No experience is required. Sponsored by the Ballroom Dance Club.

Hip-Hop Dance Class for Advanced Beginners

Braun Gym, multipurpose room, 9:30 p.m.—This hip-hop class offers beginners a more challenging experience. Open to everyone with a valid gym membership. No special clothing or shoes are required. The trial class costs \$5; fee for the full term is \$30 for Caltech students and \$40 for nonstudents. Sponsored by the GSC, ASCIT, and the Alumni Fund.

Thursday, June 5

Scanning Essentials

NewMedia Classroom, 363 S. Hill Avenue, 10 a.m. to noon—Learn the proper techniques for scanning to get the result you want the first time in this hands-on workshop. Resolution and output, basic photo enhancements in Photoshop, and saving your file in the right format will be demonstrated. Fee: \$50. Registration and information: 395-3420, wenyee@caltech.edu, or <http://muri.caltech.edu/nmc/index.htm>.

Annual Book Preview Party

Dabney Lounge, 6:30 to 9 p.m.—The friends of Caltech Libraries (FOCAL) is holding a members-only preview party for their annual book sale. There will be wine and cheese tasting, and door prizes. You must be a FOCAL member to attend. Memberships will be sold at the door starting at 6 p.m. Minimum membership price is \$50.

Friday, June 6

Friends of Caltech Libraries Annual Book Sale

Dabney Lounge, 8 a.m. to 5 p.m.—The Friends of Caltech Libraries (FOCAL) is holding their annual two-day book sale. There will be a large selection of books to choose from, including travel, cooking, children's literature, and science.

Caltech Tai Chi Club

Winnett lounge, 7 p.m.—Meets Tuesdays and Fridays weekly. Sessions are free. Information: www.its.caltech.edu/~taichi.

Saturday, June 7

Friends of Caltech Libraries Annual Book Sale

Dabney Lounge, 9 a.m. to 1 p.m.—This is the second day of the Friends of Caltech Libraries (FOCAL) annual two-day book sale. There will be a large selection of books to choose from, including travel, cooking, children's literature, and science.

Intermediate Ballet Class

Braun Gym, multipurpose room, 1 p.m.—Free class taught by experienced members of the Caltech Dance Troupe. No special clothing or shoes are required.

Chamber Singers Concert

Dabney Lounge, 8 p.m.—This special concert will feature madrigals and chansons from the Renaissance in English, Italian, German, and French, and Bach's motet “Singet dem Herrn ein neues Lied” for double choir. Admission is free. Information: 395-4652, 1 (888) 2CALTECH, or events@caltech.edu. Individuals with a disability: 395-4688 (voice) or 395-3700 (TDD). Visit Public Events at www.events.caltech.edu.

Monday, June 9

Baby Furniture and Household Equipment Pool

234 S. Catalina, 10 a.m. to 12:30 p.m.—Loans of kitchen and household necessities and baby furniture are made to members of the Caltech community. Information: 584-9773.

Staff Service Awards Program

Beckman Auditorium, 10 a.m.—Caltech's 48th annual staff service awards program will be followed by a reception in Beckman Institute courtyard. Friends, family, and colleagues are welcome to attend.

Tuesday, June 10

Photoshop Class

NewMedia Classroom, 363 S. Hill Avenue, 10 a.m. to noon—Learn the important functions of Photoshop, such as selection, layers, image enhancement, and correct file formats. The emphasis is on research images, but the information is useful to anyone working with images. This two-day class will continue on Thursday. Registration: 395-3420 or wenyee@caltech.edu. Fee: \$100. Information: <http://muri.caltech.edu/nmc/index.htm>.

Caltech Tai Chi Club

Winnett lounge, 7 p.m.—Meets Tuesdays and Fridays weekly. Sessions are free. Information: www.its.caltech.edu/~taichi.

Amnesty International Letter Writing

Athenaeum Rathskeller, 7:30 p.m.—Caltech/Pasadena AI Group 22 will host an informal meeting to write letters on human-rights abuses around the world. All are welcome. Refreshments. Information: (818) 354-4461 or lkamp@lively.jpl.nasa.gov. Visit our website at www.its.caltech.edu/~aigp22.

Wednesday, June 11

Baby Furniture and Household Equipment Pool

234 S. Catalina, 10 a.m. to 12:30 p.m.—Loans of kitchen and household necessities and baby furniture are made to members of the Caltech community. Information: 584-9773.

Thursday, June 12

Photoshop Class

NewMedia Classroom, 363 S. Hill Avenue, 10 a.m. to noon—A continuation of Tuesday's class. Information: <http://muri.caltech.edu/nmc/index.htm>.

Friday, June 13

109th Annual Commencement

Beckman Mall, 10 a.m. to noon.

Caltech Tai Chi Club

Winnett lounge, 7 p.m.—Meets Tuesdays and Fridays weekly. Sessions are free. Information: www.its.caltech.edu/~taichi.

Saturday, June 14

Intermediate Ballet Class

Braun Gym, multipurpose room, 1 p.m.—Free class taught by experienced members of the Caltech Dance Troupe. No special clothing or shoes are required.

Sunday, June 15

Skeptics Society Lecture

Baxter Lecture Hall, 2 p.m.—“Y: The Descent of Men—Revealing the Mysteries of Maleness,” Dr. Steve Jones, professor of genetics and head of the Galton Laboratory, University College London. Donation is \$8 for nonmembers, \$5 for members and non-Caltech students. Free to the Caltech/JPL community. Tickets and information: 794-3119 or skepticmag@aol.com. Visit the Skeptics Society at www.skeptic.com. A book signing will follow the lecture.

Amnesty International Book Discussion Group

Vroman's Bookstore, 695 E. Colorado Boulevard, 2nd floor, 6:30 p.m.—This month's book is *The Pickup*, by Nadine Gordimer. All are welcome. Sponsored by Caltech/Pasadena AI Group 22. Visit Group 22 at www.its.caltech.edu/~aigp22.

Monday, June 16

Baby Furniture and Household Equipment Pool—CLOSED TODAY

Tuesday, June 17

Premiere Video Editing Class

NewMedia Classroom, 363 S. Hill Avenue, 10 a.m. to noon—Learn about digitizing video for use on your computer, including basic editing techniques, adding titles, and using effects and transitions. Output your final project to tape or to file. This two-day class will continue on Thursday. Fee: \$100. Registration: wenyee@caltech.edu. Information: <http://morel.caltech.edu/classes/workshops.html>.

Caltech Tai Chi Club

Winnett lounge, 7 p.m.—Meets Tuesdays and Fridays weekly. Sessions are free. Information: www.its.caltech.edu/~taichi.

Wednesday, June 18

Baby Furniture and Household Equipment Pool

234 S. Catalina, 10 a.m. to 12:30 p.m.—Loans of kitchen and household necessities and baby furniture are made to members of the Caltech community. Information: 584-9773.

Travel Fair

San Pasqual Walk, 10 a.m. to 1 p.m.—Join Travel Services in front of Chandler Dining Hall and the convenience store for three hours of fun and prizes, including free car rentals, hotel stays with breakfast, and more. Meet representatives from our preferred travel agency, airlines, and hotels. Raffles will be held, and one lucky entry from our travel survey will win the grand prize. Information: <http://atc.caltech.edu/Finance/PPS/payment/travelhome.htm>.

Laboratory Safety for Continuing Researchers

118 Keith Spalding Building, 3 p.m.—This refresher course, for researchers continuing their work in laboratories, will review issues including laboratory organization, emergencies, injuries, fire, earthquake, chemical and radioactive material incidents, general laboratory safety, chemical storage, transporting chemicals, preparation for experiments, electrical safety, mechanical safety, and Safety Office services. Registration: 395-6727 or e-mail safety.training@caltech.edu. (New researchers should register for Lab Safety 101.)

Thursday, June 19

Premiere Video Editing Class

NewMedia Classroom, 363 S. Hill Avenue, 10 a.m. to noon—A continuation of Tuesday's class. Information: 395-3420, wenyee@caltech.edu, or <http://morel.caltech.edu/classes/workshops.html>.

Women's Wellness Series: Skin Cancer

Steele House (carriage house), noon—Skin cancer is the most common of all cancers. It accounts for nearly half of all cancers in the United States. More than one million cases of nonmelanoma skin cancer are found in this country each year. Learn more about skin cancer at this discussion sponsored by the Caltech Women's Center. Reservations: emery@studaff.caltech.edu.

Friday, June 20

Caltech Tai Chi Club

Winnett lounge, 7 p.m.—Meets Tuesdays and Fridays weekly. Sessions are free. Information: www.its.caltech.edu/~taichi.

Saturday, June 21

Caltech/JPL Day at Dodger Stadium

Dodger Stadium, 11 a.m. to 3:30 p.m.—Admission costs \$8 and includes a carnival at 11 a.m. and pavilion seats for the game, which begins at 1:10 p.m. Carnival activities for kids include wall climbing, slides, clowns, and face painting. Tickets are available at the Caltech Ticket Office, the Bookstore, Tech Express, and Human Resources; at JPL at the JPL Store and the Credit Union Office, building 218; and at the Caltech Employees Federal Credit Union, 528 Foothill Boulevard, La Cañada. Information: 395-3300.

Child Educational Center Wine-Tasting Benefit

Avery House, 6:30 to 11 p.m.—Enjoy an evening under the stars and experience fine wines, great food, and live jazz from the Chad Edwards Quartet. Guests may bid on unique auction items and take their chances at the gaming tables. All proceeds directly benefit the nonprofit Child Educational Center. General admission costs \$35; \$65 for connoisseur level. Tickets and information: (818) 354-3418 or hruppel@caltech.edu.

Sunday, June 22

Skeptics Society Lecture

Baxter Lecture Hall, 2 p.m.—“Mind Power: Fact, Fiction and Fakery,” Ian Rowland, professional entertainer, speaker, and writer. Donation is \$8 for nonmembers, \$5 for members and non-Caltech students. Free to the Caltech/JPL community. Tickets and information: 794-3119 or skepticmag@aol.com. Visit the Skeptics Society at www.skeptic.com.

Probe, from page 1

know, for example, the exact composition or even the temperature of the core, and what they do know is based on inferences from seismic data accumulated during earthquakes.

Stevenson says his proposal should be attractive to the scientific community because it is of the same scale, pricewise, as planetary exploration. Sending something into Earth's core, Stevenson says, will have comparable payoffs in the quest for knowledge.

"The biggest question should not be the cost, but whether we should pursue the goal of exploring Earth's interior," he says. "That said, I'd suggest we do it if we can keep the cost under \$10 billion."

Stevenson's plan calls for a crack to be opened in Earth's crust, perhaps with some sort of explosion—probably a nuclear bomb. According to his figures, the crack will need to be several hundred meters in length and depth, and about 30 centimeters wide, to accommodate a volume of about 100,000 to several million tons of molten iron.

The instant the crack opens, the entire volume of iron will be dropped in, completely filling the open space. Through the sheer force of its weight, the iron will create a continuing crack that will open all the way to the planet's core 3,000 kilometers below.

"Once you set that condition up, the crack is self-perpetuating," he explains. "It's fundamentally different from drilling, where it gets harder and harder—and eventually futile—the farther you go down."

The iron will continue to fall due to gravity. Riding along in the mass of liquid iron will be one or more probes made of a material robust enough to withstand the heat and pressure. The probe will perhaps be the size of a grapefruit but definitely small enough to ride easily inside the 30-centimeter crack without getting wedged.

The probe will contain instruments to collect data, which will be relayed through low-intensity mechanical waves of some sort—probably through deformations of the ball itself—to send out a kind of "Morse code" of data. Because radio waves cannot propagate through the planet, this is the only way to get the data transferred.

Based on the rate at which the molten iron falls due to gravity, the ball would move downward into Earth at roughly a human running pace (about 10 miles per hour), meaning that the entire mission would last a few weeks.

All this may sound to some like science fiction, but Stevenson says each of the principles involved is based on sound knowledge of crack propagation, fluid dynamics, mechanical-wave propagation, and "stress states."

•

Commencement, from page 1

ing international students and their families and friends, held by the Office of International Student Programs, and one for all graduates and their guests, hosted by President David Baltimore, Alice Huang, and the Caltech Alumni Association; the traditional senior banquet at the Athenaeum; and a graduate banquet at the Westin Hotel. Ending the day will be an annual concert, featuring graduating students performing for their families and friends.

A final reception and luncheon on Friday, following the commencement exercise, will send off all grads in style. The gathering for students and their guests begins at noon on the Athenaeum lawn. For more details on Commencement 2003 activities, e-mail commence@caltech.edu or visit <http://pr.caltech.edu/commencement/03>.

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Service Awards to recognize longtime employees

Honoring those who have reached employment milestones, the 48th annual Staff Service Award Ceremony will be held on Monday, June 9. Caltech community members are invited to Beckman Auditorium at 10 a.m. to cheer on colleagues who have served 10 years or more (in increments of five years). Provost Steve Koonin will give an address and, following the ceremony, awardees and audience are invited to a reception in the Beckman Institute courtyard. At noon, awardees with upwards of 20 years of employment will enjoy an Athenaeum lunch, hosted by Tom Schmitt, associate vice president for human resources and campus services.

Some honorees have been here so long, even they're surprised. "I can't believe it's been 35 years!" says Dorotea (Dottie) Chiriaco. As a new hire in accounts payable, she started in Throop Hall, which was damaged in the 1971 San Fernando earthquake and torn down. Having worked in finance before there were even calculators, she's thankful for the advent of computers—"I don't know where we'd be without spreadsheets." She worked her way up to accountant and now is in trust accounting. "The

people at Caltech have been wonderful to work with," she says.

David Johnson heard about the Institute from his sister's father-in-law, Francis Lehner—one of the first engineers in Seismology. Still a high schooler, Johnson began by changing the paper in the seismographs, joining the technical support staff full-time after graduating in 1967. The job's technical nature, field work, and flexibility have suited him well. "I love being outdoors," he says, describing having to "deal with snakes, scorpions, and spiders" on post-earthquake expeditions. He has also enjoyed meeting "a diversity of people—students, faculty, staff" on the job. "It's a great place to work."

An alum as well as an employee, ITS deputy director Bob Logan started working the week after he graduated with a BS in engineering in 1968. "It's been lots of fun and I've seen lots of changes," he says, recalling a time when "no one ever worried about parking," computers had "great big cabinets you could walk in," and the network consisted of copper wires running all over campus. Logan will probably see more changes before he retires—it'll be a while. "I'm still having fun," he says.

When he calculates that he's worked under five of Caltech's six presidents, beginning with Lee DuBridge, Dallas Oller Jr. says, "You know you've been here a long time." Once the sole network technician, he gained several colleagues in 2000 after Caltech's systems were upgraded for Y2K: "It got to be too much for one person." Oller, who's retiring in June, has really appreciated his four-decade career—"the campus setting, immaculate grounds, the atmosphere and people. I've always enjoyed getting up and going to work each day." Now how many people can say that?

Biology staff member John Racs grew up in Hungary, but left in 1957, following the attempted political revolution of the year before. He headed to Hamline University in Minnesota on a scholarship, earning a degree in biology. "I graduated one day, got married the next day, and we started driving to Los Angeles the day after that," he says. Following grad school at UCLA, he joined Caltech in 1963, when San Pasqual Avenue was still a thoroughfare with "nothing north of it." After 40 "mostly fun" years here, Racs plans to retire next year. "I'm waiting for the stock market to go back up."

10 years

Lindy Alo
Glenn Bach
Elizabeth Bertani
Diana Bisel
Patricia Burescia
Stanislav Cincera
Wayne Coffman
Eduardo Delvillar
Barbara Di Palma
John Dimmitt
Kevin Dood
Douglas Wayne Elliott
Moises Garcia
Richard Gerhart
Ismael Gonzalez
Diane Goodfellow
Helen Hasenfeld
Karianne Johnson
Scott Jung
Derrick Key
Norman Lee
Abraham Leibovici
Richard Leske
Jing Li
Steven Lo
Willie London
Steven Lord
Sara Loreda-Gallegos
Luana Lovato
Nanyao Lu
Rodrigo Luna
Amy Seidel Malak
Cruz Martinez
José Mata
Socorro Mendez
Warren Midkiff
Fred Luther Newman
Sandra Pelaez
Carolyn Porter
Linda Riggall
Floreen Rooks
Maria Rosales
Richard Savage Jr.
Nick Scheckel
Hiroaki Shizuya
Jeri Standfield
Lydia Suarez
Margaret Vinci
Wayne Waller
Robert Weber
Darryl Willick
Fumihisa Yamazaki
Chiou-Hwa Yuh
Steven Zwick

15 years

Catarino Alvarado
Paul Angelino
Michael Baker
Rachel Barnes
Phyllis Belisle
Charles Bilheimer
John Cardenas
Rosa Carrasco
Ann Margaret Chrisney
John Cromer
Evelina Cui
Siddharth Dasgupta
Dian De Sha
Kimberly Douglas
Alice Edel
Andreas Feuerabendt
Cheryl Gause
Richard Germond
Natalie Gilmore
Salvador Inchaurregui
Carol Irwin
André Jefferson
Susan Kallenbach
Joyce Kato
Leroy Lamb
Hsing-Yang Lee
Susan Lee
Wen-Piao Lee
Rosario Marquez
Aurora Marquina
Miguel McCall
Dwayne Miles
Stuart Miller
Denise Okamoto
Davida Perez
Harold Petrie
Robert Pool
Mable Poon
Laura Quattro
Timothy Ranalli
Irma Ribeiro
Anita Romero
Marion Schmitz
Tracy Sheffer
Peter Siegel
Arlana Silver
Douglas Smith
Donna Sparks
John Strickland
Ruth Sustaita
Frank Teng
Carlette Thompson
Larry Watanabe
Ann Wehrle
Rosa Wing
Carl Winstead
Dana Young

20 years

Elliott Andrews
Patricia Bateman
Chris Ann Baughman
Gloria Brewster
Robert Carr
Jerolyn Chittum
Nian-Ming Chiu
Rochelle Diamond
Effie D'Souza
Alireza Ghaffari
Deborah Gira
Delores Lee
Johnny Noyes
Milton Olander III
Robert Paz
Martha Penunuri
Steve Stryker
Candace Vavra
Herlinda Vega
Larry Wallace
Douglas Warden

25 years

Cynthia Akutagawa
Michael Anchondo
Emilio Arroyo
Elizabeth Ayala
Barbara Barth
Ana Lidia Bowman
Thomas Chester
Elsa Echegaray
Suzanna Horvath
L. Katherine Hutton
Eugene Kopan
Guillermina Martinez
Marlys Murray
Patricia Norman
John O'Keefe
Irena Petrac
Gwenda Pollard Murdock
Jane Raymond
Stephen Scott
Kim Stapp
Roberto Vega
Dennis Wittman
David Woody

30 years

Alan Cummings
Cathy Fontenette
Richard Goeden
Richard Gomez
Jean Grinols
John Hanson
Paul Koceski
Gerald Landry
Josephine Macenka
Michael Miranda
Cecile Rose
Gerald Thompson

35 years

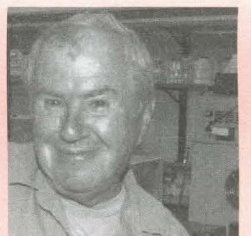
Dorotea (Dottie) Chiriaco
David Johnson
Bob Logan

40 years

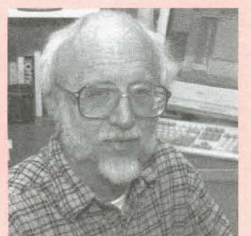
Dallas Oller Jr.
John Racs



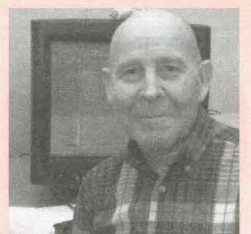
Dorotea (Dottie) Chiriaco



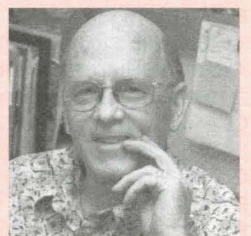
John Racs



Bob Logan



Dallas Oller Jr.



David Johnson

AAAS, from page 1

selection process, said Spacks, "recognizes those who have made preeminent contributions to their disciplines."

Anson, Caltech's Gilloon Professor of Chemistry, Emeritus, has carried out pioneering work on the electrochemistry of polymers, the catalysis of electrode reactions, and electrochemical reactions involving ultrathin coatings of molecules on electrode surfaces.

Camerer, who is the Axline Professor of Business Economics, specializes in experimental and behavioral economics, incorporating psychology in the study of decision sciences and game theory. His experiments and field studies of people's decision-making behavior have given insights into predicting economic trends and understanding social policy.

Professor of Geobiology Kirschvink, who has been honored by students for his teaching excellence, studies how biological evolution has influenced and been influenced by major events on Earth's surface. His most significant contributions include the "snowball" theory, which posits that Earth may have entirely frozen over several times in its history, possibly stimulating evolution. Another original concept concerns the Cambrian evolutionary explosion, which he believes may have been partly precipitated by Earth's rotational axis moving to the equator in a short interval of time.

Also among this year's class of 187 fellows and 29 foreign honorary members are United Nations Secretary-General Kofi Annan; journalist Walter Cronkite; philanthropist William Gates, Sr.; novelist Michael Cunningham; recording industry pioneer Ray Dolby; artist Cindy Sherman; and Nobel Prize-winning physicist Donald Glaser. The academy will welcome the class mem-

bers at its annual induction ceremony in Cambridge, Massachusetts, in October.

Founded in 1780 by John Adams, John Hancock, and other scholar-patriots, the academy has over the generations elected the finest minds and most influential leaders, including George Washington, Benjamin Franklin, Albert Einstein, Winston Churchill, and, currently, more than 150 Nobel laureates and 50 Pulitzer Prize winners. Drawing on its members' expertise, the AAAS conducts innovative nonpartisan studies on international security, social policy, education, and the humanities.

Blood and platelet donors sought

The City of Hope's Blood Donor Center, which held a successful blood drive on campus several months ago, is again seeking donors to give blood or platelets.

According to Bridget Marshall, platelet and blood donor recruiter at City of Hope, many of the Caltech community members who donated blood in January are now able to give again, and the needs are great. "The medical center has been filled nearly to capacity for the past six months," she says, "with almost all patients requiring transfusions." The number of patients needing platelet transfusions has increased, as have patients who have cancer or are undergoing bone marrow transplants—both conditions that require numerous transfusions.

To make a blood or platelet donation appointment, call the City of Hope at (626) 359-8111, ext. 64369.

Student Affairs, from page 1

Under the new structure, ISS will now handle international student immigration and visa issues, as well as those for scholars, while ISP staff members Jim Endrizzi, Tara Tram, and Fernando Contreras will continue providing other support and programs. Addressing concerns of a downgrade in services, Borodinsky said, "While it might appear that student services have been reduced, the number of people actually increases," referring to the seven ISS staff members who are now available to assist students.

Borodinsky also noted that before Residence Life came into being in the early 1990s, most of its functions were handled by the Master of Student Houses. Thus, he said, "We're reinventing a structure that worked in the past." Working closely with Professor Catherine Jurca, the current MOSH, and with Marshak will be Tom Mannion, director of Campus Auxiliary and Business Services. He has been named senior director of Campus Life, a new umbrella entity encompassing a range of student life services for which he will provide oversight; plus he will manage student housing and dining within Student Affairs.

Other changes are the merging of the Counseling Center and Health Center administration under Kevin Austin, now the senior director of health services, with Stuart Miller continuing as director of health services. Student Affairs' system development office has been closed and the Administrative Technology Center will take on its functions. Erica O'Neal, director of Minority Student Education, has been promoted to assistant vice president, taking on the added task of overseeing the undergraduate admissions office; financial aid, which will also process graduate student loans; the registrar's office; and the Women's Center.

"We had a very flat organization," Marshak said, referring to the fact that Sharyn Slavin Miller, assistant vice president for student affairs, was overseeing a dozen departments. "Anyone in executive management will tell you that's too many." With O'Neal now supervising some of them, Student Affairs can give closer attention to all departments.

Marshak expressed confidence that those taking on added responsibilities will contribute much to a leaner, more cost-effective organization. "We're fortunate to have Tom Mannion—he's popular with students, and I think he's a good match for them and for Student Affairs. And Margie Gooding of Human Resources has a national reputation for her work with students, faculty, and staff in immigration matters." Of O'Neal, who came to Caltech last fall, she said, "Erica has, in my opinion, all the skills I need in an assistant vice president. It has nothing to do with longevity or age. She has the skills, the judgment,

and can see both the big picture and the details . . . She was simply the best choice."

While it's likely that changes will continue to take place in Student Affairs, Marshak believes the "major part" of the current restructuring is complete. The organization is also continuing to evolve in other ways, such as the recent decision to keep its offices open during lunch hour. "The students were really pleased," she said. Borodinsky concurred, voicing his expectation that the organization will continue to seek ways to comprehensively and effectively respond to students' needs.

Mueller, from page 1

plates were produced, and 19,000 of those had made their way to the dim vault in Robinson.

"I knew that it needed to be done right or the plates could be at risk in the future," Mueller says. So she approached Richard Ellis, the director of the Caltech Optical Observatories, to volunteer her services. "I asked if I could put together a team to organize and inventory the collection."

Given the go-ahead, the former USC librarian used her considerable skills to bring order to chaos. Once word got out that help was needed, members of the Mt. Wilson Observatory Association and the L.A. Astronomical Association volunteered to help.

"Everyone who was asked said yes, and everyone stayed on through the end," Mueller says of her 11 teammates. Over 13 weekends, the volunteers spent more than one thousand hours poring over the stacks, placing plates in protective sleeves, and packing them in boxes. But their time down there wasn't all drudgery.

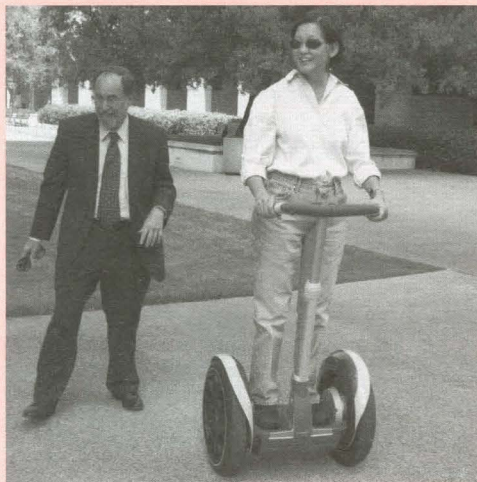
Every once in a while, the team would gather around a light box to appreciate the wonders of the cosmos. "People certainly enjoyed looking at Milky Way fields and plates that had the Orion Nebula—it's very beautiful to look at," Mueller recalls.

Now that more than 500 boxes of plates have been transported and stored at Palomar, Mueller looks back in wonder. "It was a monumental effort by an extraordinary group of people," she says. "This was the most incredible volunteer team effort that I've ever been involved in."

All of the volunteers were presented with the gift of having asteroids named after them, compliments of Carolyn Shoemaker, who has discovered more comets than any other individual in history, Mueller says. And her work did not go unnoticed by her boss.

"In recognition of her devotion well beyond the normal call of duty, I arranged for her to visit Keck Observatory and see how things are done at our 'other' telescope," Ellis says. She will spend much of the month of June in Hawaii.

Around campus



Perhaps a bit enviously, President Baltimore poses with his wife, Senior Councilor for External Relations Alice Huang, who received a Segway "personal transporter" as a gift. Representatives of the high-end scooter company came to campus May 16 to give a demonstration.



A 300-ton crane got things moving in a big way as construction began on Caltech's new power cogeneration system. Slated for completion in July, the system is expected to save the Institute about \$2.5 million each year in energy costs, as well as to reduce emissions.

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