

# Caltech 336

T E S S M T W T E S S M T W

The campus community biweekly

April 1, 2004, vol. 4, no. 7

## HP chief will send grads off

Carly Fiorina, chair and chief executive officer of Hewlett-Packard, will be Caltech's 110th commencement speaker on Friday, June 11, Caltech president David Baltimore announced.

One of the country's best-known corporate executives, Fiorina has led HP since 1999. The company provides computing and imaging solutions and services, with a focus on "making technology and its benefits accessible to all." She spearheaded the company's 2002 merger with Compaq.

Prior to joining HP, Fiorina spent nearly 20 years at AT&T and Lucent Technologies, where she held a number of senior leadership positions. She holds a bachelor's degree in medieval history and philosophy from Stanford University, an MBA from the Robert H. Smith School of Business at the University of Maryland, College Park, and an MS degree from MIT's Sloan School.

In July 2001, Fiorina was named an honorary fellow of the London Business School, and last year she received the 2003 Appeal of Conscience Award and the 2003 Concern Worldwide Seeds of Hope Award.

## "Take Our Children" returns

What do mommy and daddy do at Caltech all day? The perfect opportunity to show our children exactly what we do is coming up on Thursday, April 22, during this year's Take Our Children to Work Day.

Caltech staff, faculty, and postdocs are encouraged to bring their boys and girls to the Institute for a day of activities and discovery. The children who visit the campus will get to see up close exactly what goes on in modern research laboratories, and hear researchers explain the purpose of their experiments. They will also visit the shops and auxiliary services—support systems that make research possible as well as make the Institute run smoothly.

"We have a unique opportunity to introduce our children to the exciting things that go on here and to interest them in careers that will be important to their future and that of our nation," says Dlorah Gonzales, director of the Employment Office.

This year's list of participating offices, labs, and divisions includes the Seismo Lab, biology (Professor Kai Zinn), chemistry (Professors James Heath and David MacMillan), the aeronautics shop, and Facilities Management, which includes

see *Children*, page 6



## Pickering, former JPL director, dies

William H. Pickering—director of JPL from 1954 to 1976, a central figure in the U.S. space race, and a Caltech alum and professor—died March 15 of pneumonia at his home in La Cañada Flintridge. Known affectionately as "Mr. JPL" and "Rocket Man," and one of just a handful of people to appear twice on the cover of *Time* magazine, Pickering was 93.

"Dr. Pickering was one of the titans of our nation's space program," said Charles Elachi, the current director of JPL and a Caltech professor. "It was his leadership that took America into space and opened up the moon and planets to the world."

Ed Weiler, NASA's associate administrator for space science, said, "He brought a vision and passion to space exploration that was remarkable. His pioneering work is the very foundation we have built upon to explore our solar system and beyond."

Pickering joined JPL in 1944, at a time when the Laboratory was developing missile systems for the U.S. Army. He organized the electronics efforts to support guided-missile research and development, becoming project manager for JPL's first operational missile, Corporal. It was not a simple project. In a 1994 interview, Pickering recalled the trials and tribulations of testing the early guidance systems.

"For the 100th Corporal that we tested," he said, "I pushed the [launch] button—and the darn thing went east instead of north. I never pushed the button again." Eventually, under his direction, the Lab designed and developed the Sergeant solid-propellant missile.

Named the Lab's director in 1954, Pickering soon had his hands full with the space race. Following the first Soviet Sputnik launch, JPL and the Army Ballistic Missile Agency were assigned in November 1957 to place the first U.S. satellite in orbit. Under Pickering's direction, in just 83 days, JPL provided the satellite, telecommunications, and upper rocket stages that lofted Explorer 1 into orbit January 31, 1958. The launch, considered one of his greatest achievements, laid the groundwork for a new era of robotic space exploration.

Pickering later recalled the Explorer 1 success and its impact. "The event was

see *Pickering*, page 6

## A revolution recognized



Charles Casey (left), president of the American Chemical Society, presents a bronze plaque to David Tirrell, chair of the Division of Chemistry and Chemical Engineering, designating the Beckman pH meter a National Historic Chemical Landmark. Invented by Caltech alum, trustee, and former professor of chemistry Arnold O. Beckman, the pH meter—a device for quickly measuring acidity—revolutionized instrumentation and led to his founding Beckman Instruments, a leading manufacturer of equipment used in medicine, industry, and science.

## Supershear gives quakes a super shake

As if folks living in earthquake country didn't already have enough to worry about, scientists have now identified another rupture phenomenon that can occur during certain types of large earthquakes. The question now is whether the phenomenon is good, bad, or neutral in terms of human impact.

Reporting in the March 19 issue of the journal *Science*, Caltech geophysics graduate student Kaiwen Xia, aeronautics and mechanical engineering professor Ares Rosakis, and geophysics professor Hiroo Kanamori have demonstrated for the first time that a very fast, spontaneously generated rupture known as "supershear" can take place on large strike-slip faults like the San Andreas. They base their claims on a laboratory experiment designed to simulate a fault rupture.

While calculations dating back to the 1970s have predicted that such supershear rupture phenomena may occur in earthquakes, seismologists only recently began assuming that supershear was real. The Caltech experiment demonstrated

see *Supershear*, page 6

## Employee is still missing

Wade Cooksey, a geodetic technician in Caltech's Division of Geological and Planetary Sciences since 1999, has been missing since March 5, when he was caught in a blinding snowstorm while working atop Mount Lewis in Lander County, Nevada.

In a memo to the Caltech community, Caltech chief of security Gregg Henderson reported that Cooksey was "repairing a communications system used to recover global positioning system data from remote geodetic sites in north central Nevada." Caltech operates 53 such sites, which are used to study movement of the earth's crust and how it relates to earthquakes, in Nevada, Utah, Arizona, and eastern California.

According to Henderson, the Lander County Sheriff's Department reported that Cooksey had been caught in a snowstorm that reduced visibility to less than five feet. A search of the mountain was launched that included Navy helicopters, four-wheel-drive vehicles, dog teams, snowmobiles, and rescuers on foot.

see *Missing*, page 6



# NewsBriefs



The Monday and Thursday Jazz Bands spent a day at Capitol Records recording for a new CD planned for the fall. Directed by Bill Bing, the groups worked with renowned engineers Charlie Paakkari, winner of two Emmys and two Grammys, and Steve Krause, score mixer for films such as the recent *Miracle* (on whose soundtrack Bing also played trumpet). In a studio frequented by the likes of Sinatra, Nat King Cole, James Taylor, and Ringo Starr, the bands, featuring grad students George Becker and Kjerstin Easton as soloists, recorded numbers from their recent "It's All About Mingus" concert.

## Personals

### Welcome to Caltech

#### March

**Emily Abbott**, associate director, Development and Alumni Relations; **Steven Baca**, electromechanical technician, Submillimeter Observatory; **Sylvain Bernard**, visitor in geology; **James Brosius**, security officer, Campus Security and Parking; **Noemi Lopez Cardona**, housekeeper, Athenaeum; **Young-Hoon Joe**, visitor in physics; **Kanani Lee**, O. K. Earl Postdoctoral Scholar; **Michael Mendez**, research technician, chemistry and chemical engineering; visitors **Armando Remondes**, in biology, and **William Royea**, in chemistry; **Minerva Smith**, administrative aide, Alumni Association; postdoctoral scholars **Konstantin Taganov** and **Qiang Tu**, both in biology.

#### New positions

**Richmond Wolf**, formerly associate director of the Office of Technology Transfer, has been appointed director. Wolf has assumed some of the day-to-day functions of Lawrence Gilbert, who was earlier named senior director of the office. A registered patent agent, Wolf is responsible for managing Caltech/JPL's intellectual-property portfolio—which involves more than 1,500 issued and pending patents—as well as dealing with the licensing of patents to outside companies and with issues involving patent prosecution. He received his AB from Princeton in 1992 and his PhD in geology and geochemistry from Caltech in 1997, and he has cofounded two companies, WebEventBroadcasting and Xen Golf.

## Honors and awards

**David Baltimore**, president of Caltech and Nobel laureate, was chosen by the Israel Academy of Sciences and Humanities to deliver the Albert Einstein Annual Lecture at the academy's headquarters in Jerusalem on March 14, when he spoke on "Biotechnology—An Industry with a Future." President of Caltech since 1997, Baltimore is also chairman of the National Institutes of Health AIDS Vaccine Research Committee. He shared the Nobel Prize in physiology or medicine in 1975—for identifying the enzyme reverse transcriptase, which synthesizes DNA from RNA and plays a role in the development of cancer—and received the National Medal of Science in 1999.

**David Charbonneau**, Millikan Postdoctoral Scholar in Astronomy, has been selected to receive the Astronomical Society of the Pacific's Robert J. Trumpler Award, which "is given each year to a recent recipient of the PhD degree in North America whose research is considered unusually important to astronomy." The award consists of a plaque and a check for \$500. He has also been named to receive the Bart J. Bok Prize for "outstanding research by a recent graduate of the Harvard Department of Astronomy." Charbonneau joined Caltech in September 2001.

**Charles Elachi**, Caltech vice president, director of the Jet Propulsion Laboratory, and professor of electrical engineering and planetary science, was named to the William Gould Dow Distinguished Lectureship, which is "the highest external honor" bestowed by the University of Michigan's department of electrical engineering and computer science, and recognizes the accomplishments of individuals outside the university system "who have made outstanding contributions" in the field of electrical engineering and computer science. Elachi spoke on "Space Exploration in the Next Decade—Challenges and Opportunities." He has worked at Caltech/JPL since 1971, the year he received his Caltech PhD in electrical engineering.

### Staffer in line for video stardom

**Maylani Higa**, a staff member in the Fellowships Advising and Study Abroad Office, has made it to the second round of a "video casting call" sponsored by Ford Motor Company for fans of the *American Idol* television program. Higa submitted a music videotape of herself that will be posted at [www.fordvehicles.com/americanidol3](http://www.fordvehicles.com/americanidol3) from April 7 to April 20. In an online version of the popular TV program, the public will vote for their favorites on the website to determine the winners of each round. If she wins this round, she will face two other winners for a total of three rounds. The grand-prize winner will receive a 2005 Ford Focus ST and a trip for two to the *American Idol* finals in Los Angeles, and will appear in a music video with that contest's finalists. "I'm patiently (and nervously) awaiting my turn," Higa commented by e-mail.

## Club marks 107 years of service

The oldest surviving campus organization at Caltech is not, as one might guess, a science society, a fraternity or sorority, or a squad of sports-team boosters. The distinction belongs to a little-known service organization called the Gnome Club, which recently celebrated its 107th year and a long tradition of service to the Institute.

Not bad for a club that was founded at Throop College, the predecessor to Caltech, on March 9, 1897. The Gnome (pronounced know-me) Club, also known as the fraternity Kappa Gamma, started out as a secret society and was never affiliated with the traditional college Greek system.

"Over the years the Gnome Club has had a variety of roles: literary, honorary, secret society, and fraternity," says club president Joe Cheng, who received his BS from Caltech in 1985. "The objective of the club is to serve the Institute, to stimulate social activities, and to maintain and perpetuate Caltech's tradition of excellence." It also sponsors two undergraduate scholarship programs.

The first and oldest was started by an initial gift from Stan and Mary Johnson, and has grown through gifts from Gnome Club members. The second, designated exclusively for engineering majors, is the result of a gift from the estate of Ray Labory. Through these endowment funds, the Gnome Club is able to provide scholarship support to several students every year.

Club members, meanwhile, are very active in the Caltech Y and the Alumni Association, organizations that strive to strengthen the bonds between Caltech and the greater community.

Although the club's formally organized events are social gatherings—the largest, Founders' Night, celebrates the club's inception—the Gnomes have always concentrated on improving students' experience at Caltech. Senior-class members, alumni, faculty, staff members, and graduate students who have demonstrated leadership and loyalty to the Institute are invited to join. The roster of Gnomes shows that only 1,128 people have been welcomed to the club.

In its early days, the Gnome Club, one of five local fraternities, was primarily a social club whose members lived in their own off-campus house. Members drew inspiration for the name from the benevolent race of mythical gnomes said to have inhabited the Greek island of Samothrace, beings that were known for their creativity and industriousness. The club took as their mascot the pygmy owl, known as the gnome owl. The club's emblem bears a likeness of the owl perched on a crescent moon.

Initiation of new members into all five of the fraternities ended in 1931 with the opening of the first undergraduate houses at Caltech.

While supporting the new student houses, the Gnomes felt that their fellowship was too valuable to abandon. "After the fraternities were phased out, the membership became an off-campus alumni organization, and the relationship with Caltech continued," Cheng says. The club coasted along for the next 18 years and admitted only six new members from the alumni pool. The turning point came on Founders' Night in 1949, to which the club invited the president of Caltech.

"Lee DuBridge came and got wind of the Gnome Club and decided that this was a good tradition," Cheng says. "He approved the initiation of graduating

see *Gnome*, page 6

## Fay memorial slated

**A memorial service for Peter W. Fay, professor of history, emeritus, will be held on Saturday, April 17, at 2 p.m. at the Athenaeum. All members of the Caltech community are invited to attend. Fay, who passed away January 18, was an authority on China and India and was on the Institute faculty from 1955 until his retirement in 1997.**

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## Get your life in balance

With the theme of "Get Balance!", Caltech's Health and Work-Life Fair returns to campus on Friday, April 16.

Featuring free health screenings, 10-minute chair massages, goodie bags, live reggae music, and the always-popular climbing wall, the fair is open to the Caltech community and will take place from 11 a.m. to 2 p.m. on the Winnett quad. The event is sponsored by Human Resources, Caltech's Rideshare Program, the Staff and Faculty Consultation Center, and the Caltech Y, with support from Athletics, Campus Life, the Safety Office, Facilities Management, Security and Parking Services, and the Student Health Center.

Now in its second official year, the Health and Work-Life Fair evolved out of the former Wellness Week, a five-day course of events. This year, a wider range of free health screenings and resources will be available, including various screenings by representatives from Health Net, the Institute's new health-care provider, and blood-pressure screenings by Caltech's own Health Advocates, who are students trained in preventative health skills and emergency response. The American Red Cross will also hold a blood drive in Winnett lounge. Information on various requirements for the health screenings will be available at the Caltech Bookstore window display.

According to Caltech health educator Jane Curtis, coordinator of the event, she noticed shortly after she arrived on campus in 2002 that the campus culture was one of "work and more work." She hopes the fair will be a trove of information that can help Caltech community members realize the many benefits of a healthy balance of work or study, family, and other commitments in their lives—a balance that can easily get overlooked by hard-driving Techers.

One possible sign of a changing culture is the interest in nutrition that sparked a new Dining Services initiative. In response to numerous customer requests, Jenny Lew, dietician and general manager for JPL Dining Services, is working with technology manager Mabel Wong to post online nutritional information for student board meals and, eventually, all of the food service's offerings on campus and at JPL.

Lew and Wong will be among numerous representatives from participating campus organizations, including the Child Educational Center, the Caltech Employees Federal Credit Union, the Women's Center, and the Caltech Juggling Club. Among the off-campus vendors will be REI, Pasadena Cyclery, the Buddhist Tzu Chi Free Clinic, Cleveland Chiropractic College, HealthCare Partners Medical Group, the Los Angeles County Department of Community and Senior Services, Metro Commute Services, Curves, and the Pasadena Public Health Department.

For more information, contact [worklife@caltech.edu](mailto:worklife@caltech.edu) or call ext. 8360.

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April 5–11, 2004

M T W T F S S

Monday, April 5

**ASCI/CACR Seminar**  
Powell-Booth Room 100, 3 p.m.—  
“Devising Effective Parallel Algorithms  
and Tools,” Bruce Hendrickson, Sandia  
National Labs.

**Bioengineering Seminar**  
142 Keck, 4 p.m.—“Surviving the Heat  
Shock: Control Strategies for Robustness  
and Performance,” Hana El-Samad,  
mechanical engineering, UC Santa  
Barbara.

**Geological and Planetary Sciences  
Seminar**  
155 Arms, Robert Sharp Lecture Hall,  
4 p.m.—“Snowball Earth: A Thin-Ice  
Solution with Flowing Sea Glaciers,”  
James Kasting, professor of geosciences  
and meteorology, Pennsylvania State  
University.

**High Energy Physics Seminar**  
469 Lauritsen, 4 p.m.—“How to Extract  
Some Properties of Nuclei from Lattice  
QCD,” Martin Savage, professor of  
physics, University of Washington. Infor-  
mation: [www.theory.caltech.edu/people/  
helen/seminar1.html](http://www.theory.caltech.edu/people/helen/seminar1.html).

**Inorganic-Electrochemistry Seminar**  
147 Noyes, Sturdivant Lecture Hall,  
4 p.m.—“Template-Controlled Synthesis  
in the Solid State: Gaining Control Over  
the Organization of Matter for Applica-  
tions in Chemical Synthesis and Materi-  
als Science,” Leonard MacGillivray,  
assistant professor of chemistry,  
University of Iowa.

Tuesday, April 6

**Web of Science for Science and  
Engineering**  
Sherman Fairchild Library, multimedia  
conference room, noon to 1:30 p.m.—  
Learn tips and tricks for searching a  
premier bibliographic database for rel-  
evant journal articles. Information:  
[library.caltech.edu/learning/default.htm](http://library.caltech.edu/learning/default.htm).

**Special Chemistry Seminar**  
147 Noyes, Sturdivant Lecture Hall,  
2 p.m.—“Organometallic Chemistry and  
Catalysis of Cationic Transition-Metal  
and Lanthanide Complexes,” Professor  
Bart Hessen, senior lecturer in molecular  
inorganic chemistry, University of  
Groningen, the Netherlands.

**Institute for Quantum Information  
Seminar**  
74 Jorgensen, 3 p.m.—Topic to be  
announced. Andreas Winter, school  
of mathematics, University of Bristol.

**Carnegie Observatories Colloquium  
Series**  
William T. Golden Auditorium, 813 Santa  
Barbara Street, 3:30 to 5 p.m.—“Galaxy  
Properties and Kinematics to z=1.5 from  
the DEEP2 Redshift Survey,” Benjamin  
Weiner, UC Santa Cruz / Lick Observa-  
tory. Refreshments.

**Chemical Physics Seminar**  
147 Noyes, Sturdivant Lecture Hall,  
4 p.m.—“Crossed Molecular Beam Reac-  
tive Scattering: Toward the ‘Universal’  
Product Detections by ‘Soft’ Electron-  
Impact Ionization,” Professor Piero  
Casavecchia, department of chemistry,  
University of Perugia, Italy.

**Mathematics Colloquium**  
151 Sloan, 4:15 p.m.—“Nonlinear Repre-  
sentation Theory of Finitely Generated  
Groups,” Professor David Fisher, depart-  
ment of mathematics and computer  
science, Lehman College, CUNY. Infor-  
mation: [www.math.caltech.edu/events/  
colloq.html](http://www.math.caltech.edu/events/colloq.html).

Wednesday, April 7

**Astronomy Colloquium**  
155 Arms, Robert Sharp Lecture Hall,  
4 p.m.—Topic to be announced. Laird  
Close, associate professor of astronomy,  
University of Arizona. Information: [www.  
astro.caltech.edu/~gma/colloquia.html](http://www.astro.caltech.edu/~gma/colloquia.html).

**Environmental Science and  
Engineering Seminar**  
142 Keck, 4 p.m.—“The Science and  
Management of Coastal Water Quality,”  
Stanley Grant, professor of environmen-  
tal engineering, Henry Samueli School  
of Engineering, UC Irvine. Refreshments,  
Keck lobby, 3:40 p.m.

**Information Sciences and  
Technology Seminar**  
74 Jorgensen, 4 p.m.—“A Network  
Coding Approach to Information Trans-  
mission, Compression, and Security in  
Networks,” Tracey Ho, electrical engi-  
neering and computer science, MIT.  
Information: [http://netlab.caltech.edu/  
seminar](http://netlab.caltech.edu/seminar).

**Materials Research Lecture**  
106 Spalding Lab, Hartley Memorial  
Seminar Room, 4 p.m.—“Accelerated  
Molecular Dynamics Methods,” Arthur  
Voter, Los Alamos National Laboratory.  
Refreshments, 113 Spalding Lab 3:45  
p.m. Information: [www.matsci.caltech.  
edu/seminars.html](http://www.matsci.caltech.edu/seminars.html).

**Organic Chemistry Seminar**  
147 Noyes, Sturdivant Lecture Hall,  
4 p.m.—“A New Approach to the Syn-  
thesis and Discovery of Functional Mol-  
ecules,” Professor David Liu, department  
of chemistry, Harvard University.

**Leakey Speaker Series on Human  
Origins**  
Beckman Auditorium, 8 p.m.—“The  
Transition from Australopithecus to  
Homo,” Berhane Asfaw, codirector of  
the Middle Awash Research Project,  
former director of the National Museum  
of Ethiopia, founder of the Rift Valley  
Research Service, and a recipient of the  
Leakey Foundation’s Baldwin Fellow-  
ship. Tickets and information: 395-4652,  
1 (888) 2CALTECH, or [events@caltech.  
edu](mailto:events@caltech.edu). Individuals with a disability:  
395-4688 (voice) or 395-3700 (TDD).  
Visit Public Events at [www.events.  
caltech.edu](http://www.events.caltech.edu).

Thursday, April 8

**Biochemistry Seminar**  
147 Noyes, Sturdivant Lecture Hall,  
4 p.m.—“Role of CD2AP in the Immuno-  
logical Synapse,” Andrey Shaw, profes-  
sor of pathology and immunology,  
School of Medicine, Washington  
University in St. Louis.

**Physics Research Conference**  
201 E. Bridge, 4 p.m.—Topic to be  
announced. Professor Robert Jaffe,  
department of physics, MIT. Refresh-  
ments, 114 E. Bridge, 3:45 p.m.

**Social and Information Sciences  
Laboratory Seminar Series**  
25 Baxter, 4 p.m.—“Conditioning Prices  
on Purchase History,” Professor Hal  
Varian, department of economics, UC  
Berkeley. Refreshments.

Friday, April 9

**High Energy Theory Seminar**  
469 Lauritsen, 11 a.m.—Topic to be  
announced. Yang-Hui He, department  
of physics and astronomy, University  
of Pennsylvania. Information: [www.  
theory.caltech.edu/people/seminar/  
schedule.html](http://www.theory.caltech.edu/people/seminar/schedule.html).

**High Energy Theory Seminar**  
469 Lauritsen, 1 p.m.—Topic to be  
announced. Joerg Teschner, Freie  
Universität Berlin. Information:  
[www.theory.caltech.edu/people/  
seminar/schedule.html](http://www.theory.caltech.edu/people/seminar/schedule.html).

**Fluid Mechanics Seminar**  
101 Guggenheim Lab, Lees-Kubota  
Lecture Hall, 3 p.m.—Topic to be  
announced. Rodney Bowersox, asso-  
ciate professor, department of aerospace  
engineering, Texas A&M University.  
Information: [www.galcit.caltech.edu/  
Seminars/Fluids/CurrentFluids/  
index.html](http://www.galcit.caltech.edu/Seminars/Fluids/CurrentFluids/index.html).

**Geometry and Topology Seminar**  
257 Sloan, 3 p.m.—“The Euler Class  
of Groups Acting on the Plane,” Danny  
Calegari, associate professor of math-  
ematics, Caltech. Information: [www.  
math.caltech.edu/events/topology.html](http://www.math.caltech.edu/events/topology.html).

**Inorganic-Organometallics Seminar**  
151 Crellin, 4 p.m.—“Iridium-Catalyzed  
Enantioselective Hydrogenation: New P,  
N Ligands and Mechanistic Investiga-  
tions,” Sebastian Smidt, postdoctoral  
scholar in chemistry, Caltech.

Forum to feature  
Murray, DARPA race

The Caltech Management Association  
will present a leadership forum featuring  
Professor of Mechanical Engineering  
Richard Murray. “Team Caltech: Racing to  
Win the DARPA Grand Challenge,” a free  
event for all JPL and Caltech personnel  
and retirees, will take place on Tuesday,  
April 6, from 11:45 a.m. to 1 p.m. in JPL’s  
von Karman Auditorium.

How do you get a vehicle to navigate  
itself 142 miles over open desert, dirt  
trails, and water crossings from Barstow  
to Primm, Nevada, in 10 hours or less?  
The answer could win you two million  
dollars from the Defense Advanced Re-  
search Projects Agency, which spon-  
sored its first Grand Challenge race on  
March 13.

Murray, a faculty advisor for Caltech’s  
Grand Challenge team, will discuss the  
Institute’s entry, a modified 1996 Chevy  
Tahoe SUV called Bob. In the March 13  
race, Bob covered approximately 1.3  
miles, successfully avoiding sagebrush  
and other obstacles before veering off  
course and into a barbed-wire fence.  
Although no vehicle got farther than 7.4  
miles, much of value was learned—and,  
far from being discouraged, Caltech’s  
team is ready to start preparing for Grand  
Challenge II, tentatively scheduled for  
next year.

For more information, e-mail [cma.  
announce@jpl.nasa.gov](mailto:cma.announce@jpl.nasa.gov) or call Scott  
Bowdan at (818) 354-3006.





# April 12–18, 2004

M T W T F S S

## Monday, April 12

**General Biology Seminar**  
119 Kerckhoff, 4 p.m.—Topic to be announced. David Vaux, Walter and Eliza Hall Institute of Medical Research, Australia.

**Geological and Planetary Sciences Seminar**  
155 Arms, Robert Sharp Lecture Hall, 4 p.m.—“Atmospheric Methane and Climate: The Record From Ice Cores,” Edward J. Brook, assistant professor of geology, Washington State University.

**High Energy Physics Seminar**  
469 Lauritsen, 4 p.m.—“Sleptogenesis,” Yuval Grossman, Stanford Linear Accelerator Center. Information: [www.theory.caltech.edu/people/helen/seminar1.html](http://www.theory.caltech.edu/people/helen/seminar1.html).

**Inorganic-Electrochemistry Seminar**  
147 Noyes, Sturdivant Lecture Hall, 4 p.m.—“Carbon-Based Molecular Electronics: Electron Transport and Conductance Switching in Carbon/Molecule/Metal Molecular Junctions,” Professor Richard L. McCreery, Dow Professor of Chemistry, Ohio State University.

## Tuesday, April 13

**Life Sciences Information Resources**  
Sherman Fairchild Library, multimedia conference room, noon to 1:30 p.m.—Learn the various bibliographic databases for interdisciplinary information retrieval related to life sciences, as well as options for automatically providing yourself with updates about new literature on your topic, the use of subheadings in PubMed/Medline, and other database functions and features. Information: <http://library.caltech.edu/learning/default.htm>.

**Institute for Quantum Information Seminar**  
74 Jorgensen, 3 p.m.—“Thermodynamics of Entanglement and Entanglement in Thermodynamics,” Vlatko Vedral, department of physics, Imperial College London. Information: [www.iqi.caltech.edu/seminar\\_abstracts.html#vedral04](http://www.iqi.caltech.edu/seminar_abstracts.html#vedral04).

**Carnegie Observatories Colloquium Series**  
William T. Golden Auditorium, 813 Santa Barbara Street, 3:30 to 5 p.m.—“Science with the Space Interferometry Mission,” Ann Wehrle, member of the professional staff, Michelson Science Center, JPL. Refreshments.

**Caltech/JPL Association for Gravitational-Wave Research Seminar Series**  
114 E. Bridge, 4 p.m.—“Probing Extra Dimensions Using a Superconducting Gravity Gradiometer,” Professor Ho-Jung Paik, department of physics, University of Maryland, College Park.

## Wednesday, April 14

**Mathematical Physics Seminar**  
351 Sloan, noon—“Asymptotics of Orthogonal Polynomials and Modified Wave Operators for Szegő-Type Weights,” Serguei Denissov, Taussky-Todd Instructor in Mathematics, Caltech. Information: [www.math.caltech.edu/events/mathphys.html](http://www.math.caltech.edu/events/mathphys.html).

**Astronomy Colloquium**  
155 Arms, Robert Sharp Lecture Hall, 4 p.m.—Topic to be announced. Professor Eliot Quataert, department of astronomy, UC Berkeley. Information: [www.astro.caltech.edu/~gma/colloquia.html](http://www.astro.caltech.edu/~gma/colloquia.html).

**Environmental Science and Engineering Seminar**  
142 Keck, 4 p.m.—“Using Dissolved Aluminum to Estimate Atmospheric Dust Deposition to Oceanic Waters and Dissolved Iron to Highlight Its Role in Global Biogeochemical Cycles,” Chris Measures, professor of oceanography, University of Hawaii. Refreshments, Keck lobby, 3:40 p.m.

## Thursday, April 15

**Quick Review for Electronic Theses**  
Sherman Fairchild Library, multimedia conference room, 2 to 3:30 p.m.—Caltech requires that theses be submitted in both paper and electronic versions. This presentation will offer a brief overview of techniques useful in the production and publication of electronic theses. The session will include tips on formatting, intellectual-property considerations, turning paper to pixels, creating PDFs, how to submit a thesis, and availability (who can see it and when) issues. Information: <http://library.caltech.edu/learning/default.htm>.

**Chemical Engineering Series**  
106 Spalding Lab, Hartley Memorial Seminar Room, 4 p.m.—“Bringing Genomes to Life: The Use of Genome-Scale in Silico Models,” Professor Bernhard Palsson, department of bioengineering, UC San Diego. Refreshments, 113 Spalding Lab, 3:30 p.m.

**Social and Information Sciences Laboratory Seminar Series (SISL)**  
25 Baxter, 4 p.m.—“Designing Ancillary Service Markets in Restructured Electricity Systems,” Professor Shmuel Oren, department of industrial engineering and operations research, UC Berkeley. Refreshments.

**Von Karman Lecture Series**  
JPL, von Karman Auditorium, 7 p.m.—“Artificial Intelligence for Autonomous Control in Space,” Dr. Ayanna Howard, senior member of the technical staff, telerobotics and applications group, JPL. Admission is free. Information: [www.jpl.nasa.gov/lecture](http://www.jpl.nasa.gov/lecture).

## Friday, April 16

**High Energy Theory Seminar**  
469 Lauritsen, 11 a.m.—Topic to be announced. Michael Schulz, postdoctoral scholar in physics, Caltech. Information: [www.theory.caltech.edu/people/seminar/schedule.html](http://www.theory.caltech.edu/people/seminar/schedule.html).

**Fluid Mechanics Seminar**  
101 Guggenheim Lab, Lees-Kubota Lecture Hall, 3 p.m.—Topic to be announced. David Hill, postdoctoral scholar, Center for Advanced Computing Research, Caltech. Information: [www.galcit.caltech.edu/Seminars/Fluids/CurrentFluids/index.html](http://www.galcit.caltech.edu/Seminars/Fluids/CurrentFluids/index.html).

**Inorganic-Organometallics Seminar**  
151 Crellin, 4 p.m.—“Stereoselective Olefin Metathesis: Diene Cross-Metathesis and Enantioselective Ring-Closing Metathesis,” Timothy Funk, graduate student in chemistry, Caltech.

**Kellogg Seminar**  
Lauritsen Library, 4 p.m.—Topic to be announced. Xiangdong Ji, professor of theoretical physics, University of Maryland, College Park.

**Von Karman Lecture Series**  
Pasadena City College, 1570 E. Colorado, the Vosloh Forum (south of Colorado on Bonnie), 7 p.m.—“Artificial Intelligence for Autonomous Control in Space,” Dr. Ayanna Howard, senior member of the technical staff, telerobotics and applications group, JPL. Admission is free. Information: [www.jpl.nasa.gov/lecture](http://www.jpl.nasa.gov/lecture).



# CampusEvents

## Monday, April 5

**Baby Furniture and Household Equipment**  
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. **Available today by appointment only; call 395-6174.**

## Tuesday, April 6

**Preschool Playgroup**  
Tournament Park, 10 a.m. to noon—Song and storytime, crafts and free play for toddlers and preschoolers (from walking to age 4). Information: 793-4099 or camila\_bruns@hotmail.com.

**Caltech Tai Chi Club**  
Winnett lounge, 7 p.m.—Meets Tuesdays and Fridays weekly. Sessions are free. Information: [www.its.caltech.edu/~taichi](http://www.its.caltech.edu/~taichi).

**Voices of Vision Series**  
Beckman Auditorium, 8 p.m.—David Silverman, supervising animation director behind *The Simpsons*, will speak. Admission is free.

## Wednesday, April 7

**Baby Furniture and Household Equipment**  
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.

**Wednesdays in the Park**  
Tournament Park, 10 a.m. to noon—Every Wednesday there’s conversation and coffee for parents and caregivers, and playtime and snacks for children. Information: 403-7163 or [ktclark@caltech.edu](mailto:ktclark@caltech.edu).

**FOCAL Spring Luncheon**  
Athenaeum, Hall of Associates, 11:30 a.m.—Jonathan Kirsch, author of *God Against the Gods: The History of the War Between Monotheism and Polytheism*, will speak. No-host bar at 11:30 on the east patio; lunch at noon. The author will sign copies of his book before and after lunch. Fee: FOCAL members, \$40; others, \$45. Reservations: 395-6411 or [mcbride@library.caltech.edu](mailto:mcbride@library.caltech.edu).

**Laboratory Safety 101**  
118 Keith Spalding Building, 3 p.m.—This course is designed to prepare incoming researchers to work in a laboratory at the Institute. Issues include laboratory organization, emergencies, injuries, general laboratory safety, and more. Space is limited. Please call 395-6727 or e-mail [safety.training@caltech.edu](mailto:safety.training@caltech.edu) to reserve a place.

**Salsa Dance Class**  
Winnett lounge, 7 p.m.—The beginners’ session begins at 7 p.m. The intermediate lesson starts at 8:30. Lessons began on March 31. Fee: \$28 for 5 classes; \$7 per class.

## Thursday, April 8

**Reel Women’s Film Series: *Dying to Be Thin***  
Caltech Women’s Center, noon—An epidemic of eating disorders is spreading through America’s youth, a contagion fanned by the media’s obsession with wafer-thin celebrities. For millions of young Americans, the conflict between real and fashionable images of the body can be a matter of life or death. This video takes viewers behind the scenes at laboratories and hospitals where specialists are experimenting with new approaches to eating disorders. Lunch and drinks provided.

**Women’s Tennis**  
vs. Masters College, 3:30 p.m.

**Voices of Vision Series**  
Beckman Auditorium, 8 p.m.—Visiting writer Ian McEwan, author of *Atonement*, which won the 2002 National Book Critics Circle Award, will speak. A book signing will immediately follow the reading. Presented in collaboration with Caltech’s Words Matter program and Vroman’s Bookstore.

## Friday, April 9

**Caltech Tai Chi Club**  
See Tuesday, April 6, for details.

## Saturday, April 10

**Men’s Tennis**  
vs. Cal Lutheran University, 9:30 a.m.

**Track and Field**  
Azusa Pacific Invitational, at Azusa Pacific University, 10 a.m.

## Monday, April 12

**Baby Furniture and Household Equipment**  
See Monday, April 5, for details.

## Tuesday, April 13

**Preschool Playgroup**  
See Tuesday, April 6, for details.

**Caltech Tai Chi Club**  
See Tuesday, April 6, for details.

**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](mailto:lkamp@lively.jpl.nasa.gov). Visit our website at [www.its.caltech.edu/~aigp22](http://www.its.caltech.edu/~aigp22).

## Wednesday, April 14

**Baby Furniture and Household Equipment**  
See Wednesday, April 7, for details.

**Wednesdays in the Park**  
See Wednesday, April 7, for details.

**Financial Wellness Series: Preparing for Retirement**  
Caltech Women’s Center, noon—Join Denise Carter, retirement consultant and TIAA-CREF representative, as she details the ins and outs of preparing for retirement and your financial future. You are not too young or too old to start. Reservations: [wcenter@studaff.caltech.edu](mailto:wcenter@studaff.caltech.edu).

**Watch Your Back! Back Safety Training**  
118 Keith Spalding Building, 3 p.m.—This course includes a brief discussion on back anatomy and proper methods and realistic approaches to handling and moving materials. There will be a video presentation and hands-on lifting. Space is limited. Please call 395-6727 or e-mail [safety.training@caltech.edu](mailto:safety.training@caltech.edu) to reserve a place.

**Salsa Dance Class**  
See Wednesday, April 7, for details.

## Thursday, April 15

**Fine-Tuning Leadership**  
Brown Gym classroom, 8:30 a.m. to 12:30 p.m.—This half-day workshop is an action-oriented program designed to fine-tune leadership skills and teach how to handle team dynamics and conflict resolution. The course is for supervisors only. Reservations: 395-8055 or [diane.williams@caltech.edu](mailto:diane.williams@caltech.edu). Information: [http://cit.hr.caltech.edu/Education/super\\_courses/fine-tuning\\_leadership.htm](http://cit.hr.caltech.edu/Education/super_courses/fine-tuning_leadership.htm).

**Social Activism Speakers Series**  
Ramo Auditorium, 8 p.m.—Congressman Bernard Sanders of Vermont, the longest-serving Independent in the history of the House of Representatives, will speak.

## Friday, April 16

**Men’s Tennis**  
SCIAC Championships, at Redlands, 8 a.m.

**PERT: Disaster Preparation and Triage**  
Chandler Dining Hall, 8 to 10 a.m.—Pasadena Emergency Response Training (PERT) will consist of three sessions: Disaster Preparation and Triage, Fire Suppression, and Disaster Search and Rescue. This is the first of the three sessions, and all three sessions are required. You must have a current First-Aid/CPR/AED to enroll. Offered in conjunction with the Pasadena Fire Department, Caltech Safety Office, and American Red Cross. Registration: 395-6727 or [safety.training@caltech.edu](mailto:safety.training@caltech.edu).

**Women’s Tennis**  
SCIAC Championships, at Occidental College, 8 a.m.

**Health and Work-Life Fair**  
Winnett quad, 11 a.m. to 1:30 p.m.—This outdoor fair will provide health screenings, healthy foods and beverages, educational information, and summer soccer, basketball, and swim-camp signups. Come and enjoy the music, grab a chair massage, and watch students as they tackle the climbing wall.

**Baseball**  
at Claremont-Mudd-Scripps, 3 p.m.

**Caltech Tai Chi Club**  
See Tuesday, April 6, for details.

## Saturday, April 17

**Men’s Tennis**  
SCIAC Championships, at Redlands, 8 a.m.

**Women’s Tennis**  
SCIAC Championships, at Occidental College, 8 a.m.

**Baseball**  
at Claremont-Mudd-Scripps, doubleheader, 11 a.m.

**Track and Field**  
SCIAC Prelims, at Occidental College, 4 p.m.

**Collision Theory: *Abduction Project***  
Ramo Auditorium, 8 p.m.—Collision Theory is an award-winning ensemble performance company that creates and performs innovative physical theater. In *Abduction Project*, extraterrestrial visitations and alien abductions meet the “ideal” suburban family of the 1950s, in an exploration of the line between dream and reality. Tickets and information: 395-4652, 1 (888) 2CALTECH, or [events@caltech.edu](mailto:events@caltech.edu). Individuals with a disability: 395-4688 (voice) or 395-3700 (TDD). Visit Public Events at [www.events.caltech.edu](http://www.events.caltech.edu).

## Sunday, April 18

**Women’s Intermediate Self-Defense**  
Caltech Women’s Center, 1 to 5 p.m.—This class is for those women who have participated in the introductory workshop and would like the opportunity to deliver full-force, debilitating blows to a padded assailant in a variety of simulated scenarios. Registration: [wcenter@studaff.caltech.edu](mailto:wcenter@studaff.caltech.edu).

**Skeptics Society Lecture**  
Baxter Lecture Hall, 2 p.m.—“God Against the Gods: Monotheism and Polytheism,” Jonathan Kirsch, contributing writer for the *Los Angeles Times* Book Review. Donation is \$8 for nonmembers and non-Caltech students. Free to the Caltech/JPL community. Tickets and information: 794-3119 or [skepticmag@aol.com](mailto:skepticmag@aol.com). Visit the Skeptics Society at [www.skeptic.com](http://www.skeptic.com). Book signing to follow the lecture.

**Coleman Chamber Concert**  
Beckman Auditorium, 3:30 p.m.—Bassist Edgar Meyer will perform pieces by Vivaldi, Schubert, Bloch, Chopin, and Kreisler, as well as his own work. Tickets and information: 395-4652, 1 (888) 2CALTECH, or [events@caltech.edu](mailto:events@caltech.edu). Individuals with a disability: 395-4688 (voice) or 395-3700 (TDD). Visit Public Events at [www.events.caltech.edu](http://www.events.caltech.edu).

**Amnesty International Book Discussion Group**  
Vroman’s Bookstore, 695 E. Colorado Boulevard, second floor, 6:30 p.m.—This month’s book, *White Sky, Black Ice*, by Stan Jones, is a mystery novel set in the Arctic that features an Inuit detective. All are welcome. Sponsored by Caltech/Pasadena AI Group 22. Visit Group 22 at [www.its.caltech.edu/~aigp22](http://www.its.caltech.edu/~aigp22).

## Novelist McEwan to be writer in residence

Acclaimed writer Ian McEwan, author of the award-winning novel *Atonement*, will serve as Caltech’s writer in residence April 6 to 8.

Widely regarded as one of Britain’s most accomplished contemporary writers, McEwan has produced numerous novels, stories, and screenplays. His works have received the Somerset Maugham Award, the Whitbread Prize, and the Booker Prize; *Atonement*, his latest book, won the 2002 National Book Critics Circle Award and the Santiago Prize for the European Novel.

McEwan received a BA degree in English literature from the University of Sussex and an MA, also in English literature, from the University of East Anglia. A resident of London, he is currently working on a new novel.

During his Caltech stay, he will lead several discussions of his work and of the writing process, including a Humanities and Social Sciences seminar, “Literature, Science, and Human Nature,” with students from literature and creative writing classes, and will possibly teach some creative-writing sessions.

McEwan will also read from his work, followed by a book signing, on Thursday, April 8, at 8 p.m. in Beckman Auditorium. A collaboration between Words Matter, Caltech Public Events, and Vroman’s Bookstore, the reading is free and open to the public. For information, call 1 (888) 2CALTECH or (626) 395-4652, e-mail [events@caltech.edu](mailto:events@caltech.edu), or visit [www.events.caltech.edu](http://www.events.caltech.edu). Individuals with a disability: 395-4688 (voice) or 395-3700 (TDD).

The Words Matter program, intended “to foster a culture of literacy at Caltech, to cultivate students’ interest in writing in its varied forms, and to help undergraduates appreciate the many ways in which words do, indeed, matter,” is funded by the President’s Office and guided by a committee of students, faculty, and administrators. For more information, e-mail [words@caltech.edu](mailto:words@caltech.edu).

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Supershear, from page 1

that supershear fault rupture is a very real possibility rather than a mere theoretical construct.

In the lab, the researchers forced two plates of a special polymer material together under pressure and then initiated an “earthquake” by inserting into the interface a tiny wire, which is turned into expanding plasma by the sudden discharge of an electrical pulse. Using high-speed photography and laser light, the researchers photographed the rupture and stress waves as they propagated through the material.

The data show that, under the right conditions, the rupture propagates much faster than the shear speed in the plates, producing a shock-wave pattern, something like the Mach cone of a jet fighter breaking the sound barrier.

The split-second photography also shows that such ruptures may travel at about twice the rate that a rupture normally propagates along an earthquake fault. However, the ruptures do not reach supershear speeds until they have propagated a certain distance from the point where they originated. Based on the experiments, a theoretical model was developed to predict the length of travel before the transition to supershear.

In the case of a strike-slip fault like the San Andreas, the lab results indicate that the rupture needs to rip along for about 100 kilometers and the magnitude must be about 7.5 or so before the rupture becomes supershear. Large earthquakes along the San Andreas tend to be at least

this large, typically involving rupture lengths of about 300 to 400 kilometers. “Judging from the experimental result, it would not be surprising if supershear rupture propagation occurs for large earthquakes on the San Andreas fault,” says Kanamori.

Similar high-speed ruptures propagating along bimaterial interfaces in engineering composite materials have been experimentally observed in the past (by Rosakis and his group, reporting in an August 1999 issue of *Science*).

According to Kanamori, the human impact of the finding is still debatable. The most damaging effect of a strike-slip earthquake is believed to be caused by a pulse-like motion normal to the fault caused by the combined effect of the rupture and shear wave. The supershear rupture suppresses this pulse, which is good, but the persistent shock wave (Mach wave) emitted by the supershear rupture enhances the fault-parallel component of motion (the ground motion that runs in the same direction that the plates slip) and could amplify the destructive power of ground motion.

The outstanding question about supershear at this point is which of these two effects dominates. “This is still being debated,” says Kanamori. “We’re not committed to one view or the other.” Only further laboratory-level experimentation can answer this question conclusively.

Chess team’s second victory is a first

Caltech’s chess team has become the first ever to win the U.S. Amateur Team Championships, considered the country’s most prestigious nonprofessional team chess contest, two years in a row. The winning team—master players Patrick Hummel ’06 (captain) and Eugene Yanayt ’06, Graham Free ’04, and Zhihao (Howard) Liu ’06—went undefeated in their individual matches in the March 20 match, held on the Internet Chess Club website. The victory comes on the heels of their perfect 6–0 score at the Western regional championship in February, which prompted international master Jack Peters to write in the *Los Angeles Times*, “Baseball fans scream about the New York Yankees, but chess players yearn to break up Caltech.” The team also had to best the Midwest regional winners in the national semifinals before making it to the finals. In 2003, Yanayt, Free, and Liu had joined postdoctoral scholar and master player Wei Ji Ma to win the national championship in the team’s first year of competition.

Pickering, from page 1

symbolic of the mixing process between engineering and science, between the world and the research laboratory . . . it had mixed rocket technology with the universe, and reduced astronautics to practice at last.”

In 1958 the Laboratory, managed by Caltech, was transferred from U.S. Army jurisdiction to the newly created National Aeronautics and Space Administration. Under the new agency, family members recall, Pickering was given the choice of heading either human or robotic space exploration, and chose the latter. In succeeding years, JPL conducted an intensive series of space probes—Ranger and Surveyor missions to the moon, and the Mariner missions to Earth’s neighboring planets.

On December 14, 1962, Mariner 2 successfully completed a flyby of Venus, culminating a 109-day journey of more than 180 million miles—humankind’s first penetration to the vicinity of another planet. Following that triumph, Pickering rode as Grand Marshall of Pasadena’s Tournament of Roses Parade on January 1, 1963.

On July 14, 1965, following a 228-day journey of more than 325 million miles by Mariner 4, Pickering’s team obtained the first close-up pictures of Mars. Four more Mariner missions would reach Venus and Mars before Pickering retired in 1976.

He received numerous honors throughout his career, including NASA’s Distinguished Service Medal, the National Medal of Science from President Gerald Ford in 1975, and an honorary knighthood from Queen Elizabeth in 1976. He was also named to the Order of New Zealand, that country’s highest honor.

Born in Wellington, New Zealand, in 1910, Pickering came to Caltech to study in 1929. After earning his BS and MS in electrical engineering, he completed his PhD in physics in 1936, having been persuaded by then-head Robert Millikan to switch to Millikan’s own field. Pickering joined the faculty as an assistant professor of electrical engineering in 1940, was named a full professor in 1947, and retired as professor emeritus in 1979. He had become a U.S. citizen in 1941.

The longest-serving director in JPL’s history, Pickering saw five U.S. presidents—from Eisenhower to Ford—come and go during his tenure. “I guess,” he reflected in *Caltech News* in 1994, “that things were going all right, so they left me there until I got old enough to kick out.”

He is survived by his wife, Inez Chapman Pickering, and a daughter, Elizabeth Pickering Mezitt. His son, William Balfour, had died just two days before him. The family requests that memorial donations be made to the William H. Pickering Scholarship for New Zealand Graduate Students at Caltech.

News extras



President David Baltimore's name has been popping up all over lately—here, in Rishon L'tzion, a suburb of Tel Aviv, in a recently built area called Nobel Laureate Neighborhood. The photo was sent to Baltimore by Ron Prywes, a professor in the department of biological sciences at Columbia University, who discovered the street while visiting relatives in the neighborhood.

Gnome, from page 2

seniors. Being from the East Coast, he was enthusiastic about traditions.” That year, the club initiated 14 new members into its ranks, and when Caltech began admitting female undergraduates in 1970, the Gnomes welcomed their first woman soon after. Today, graduate students, faculty members, and staff may be invited to join the Gnomes.

One of those staff members is Athena Castro, the executive director of the Caltech Y, who became a Gnome several years ago. She says that many of the Y’s board members are Gnomes, and members of the student ExComm are often invited to join.

“The board members are very active in the Y,” Castro says. “I know that they also try very hard to bridge the gap and create a closer relationship between alumni and Caltech.”

Missing, from page 1

As of press time, Cooksey had not been located, and the Sheriff’s Department is continuing to search the 9,600-foot mountain. Henderson said that they believe they know his approximate location, but they have had to scale back rescue efforts because of the potential danger of avalanches.

“The Caltech community expresses its hopes and prayers for Wade, his family, colleagues and friends,” Henderson said. “We appreciate the efforts by the Sheriff’s Department and citizen volunteers from Lander County who have given of their own time to assist in the search.”

Caltech336

The campus community biweekly  
April 1, 2004, vol. 4, no. 7

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Published by the Office of Public Relations

California Institute of Technology  
Pasadena, California 91125

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