

# Caltech 336

T F S S M T W T F S S M T W

The campus community biweekly

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## Almost ready to roll



The Pasadena Fire Station No. 34, on the corner of Del Mar and Holliston, is near completion.

## Status of Women Faculty report released

The Committee on the Status of Women Faculty at Caltech, commissioned in 1999 to investigate possible gender inequities among faculty, issued its long-awaited findings in a 31-page report last month.

Chaired by Professor of Astronomy Anneila Sargent, the committee of eight female and five male faculty interviewed all 29 female professors who were at Caltech during 1999–2000. The CSWFC also spoke with a group of male professors, each of whom was considered a peer of a female professor, taking into account that issues that arose might be common to both women and men or specific to a particular field or division.

The survey's "most striking" finding, as summarized by the committee, was that "female faculty are markedly more dissatisfied than their male peers with many aspects of Caltech." Notably, although male faculty had many of the same complaints as females, they still felt satisfied with their overall situation. The committee surmised that with the very low proportion of women on the faculty (11%) and without female representation in higher administration, "these findings suggest that it is quite reasonable for female faculty to attribute at least some adverse professional experiences to unequal treatment of men and women."

The CSWFC did not, however, reach any firm conclusions regarding gender disparities in salary, and office and laboratory space allocation. Both women and men voiced dissatisfaction with their space allocation, and due to varying practices among Caltech's six academic divisions and to the low number of women, no general pattern could be established. A number of statistical salary analyses showed that female faculty members receive less pay on average than male. Again, however, partly due to the small number of women, "it can be argued that the results are statistically not significant," the report states.

The committee concluded that "to achieve its full potential, Caltech needs to hire more women faculty, be more proactive in mentoring its junior faculty, and make itself friendlier to the working family." It listed seven recommendations to achieve those goals, including increasing the proportion of female faculty to 25% in the next 10 years; monitoring salaries to ensure equity, and remedying any past or current disparities; implementing mentoring programs for junior faculty; "aggressively pursuing" improvements in the working environment to benefit all faculty and help retain women, such as

see *Women faculty*, page 6

## Coming closer to stopping a killer

Huntington's disease is a cruel disorder, destroying nerve cells in the brain and, over time, robbing an individual of the ability to walk, talk, and eat. As yet, there is no cure or effective treatment for this hereditary disorder. The end result, then, is death, caused by such complications as infection or heart failure.

Now Caltech scientists have come one step closer to understanding how Huntington's disease develops and how it can be stopped. In a paper published in the January 22 issue of the *Proceedings of the National Academy of Sciences*, Professor of Biology Paul Patterson, postdoctoral scholar Ali Khoshnan, and research assistant Jan Ko have blocked the effects of the disease in cultured cells using antibodies.

Huntington's disease (HD) is caused by a mutation in the protein huntingtin (htt), specifically by the expansion of a site on the protein called polyQ. Such sites induce the production of antibodies that

see *Huntington's*, page 6

## Caltech artist saves crash survivor

David Kremers's gift to himself on December 25 was a day at San Onofre beach, the perfect time to surf and pretend that the nearly desolate beach was all his.

But soon after three in the afternoon, Kremers, Caltech's Distinguished Conceptual Artist in Biology, had given up on the flat water and packed up his gear. He noticed that a few joggers on the beach had stopped to stare at something in the water.

"I didn't see the plane crash, but I did see it in the water and start to sink," he said.

The plane, a Cessna four-seater, had crashed about half a mile off shore. Several of the passersby had already called 911, so Kremers waited for the lifeguards to arrive.

Instead, a San Diego County police helicopter arrived shortly and hovered over the sinking plane. Kremers heard a voice from the helicopter's loudspeakers talking to somebody in the water, but no rescue personnel were in the water. As the only person with a wet suit, Kremers realized that no one else could venture into the 60-degree water. He jumped back into his suit and started swimming.

"It was late afternoon and there was lots of glare coming off the water, so I couldn't see anyone," he said. By then, the placid water had turned rough with waves, but he swam toward the helicopter.

He found the man in the water unresponsive and clinging to a life preserver.

see *Kremers*, page 6



A transgenic mouse, which carries a jellyfish gene, glows green under fluorescent light.

## Green mice a coup for Baltimore team

Using specially prepared HIV-derived viruses stripped of their disease-causing potential, Caltech biologist and president David Baltimore and his team have invented a new method of introducing foreign DNA into animals; it could have wide-ranging applications in biotechnology and experimental biology.

The Baltimore team reported on the January 10 *Science Express* Web site about their study of single-cell mouse embryos that have been virally infected in a manner that leaves a new gene from a jellyfish permanently deposited in their genomes. The mice, after they have been carried to term, have at least one copy of the gene in 80 percent of the cases, and 90 percent show high levels of the jellyfish protein. Further, the study shows that the mice's offspring inherit the genes and make the new protein. Thus the method makes "transgenic" mice—meaning the new gene has been transferred—with new genetic potential.

see *Transgenic mice*, page 6

## Brennen stepping down as VP for student affairs

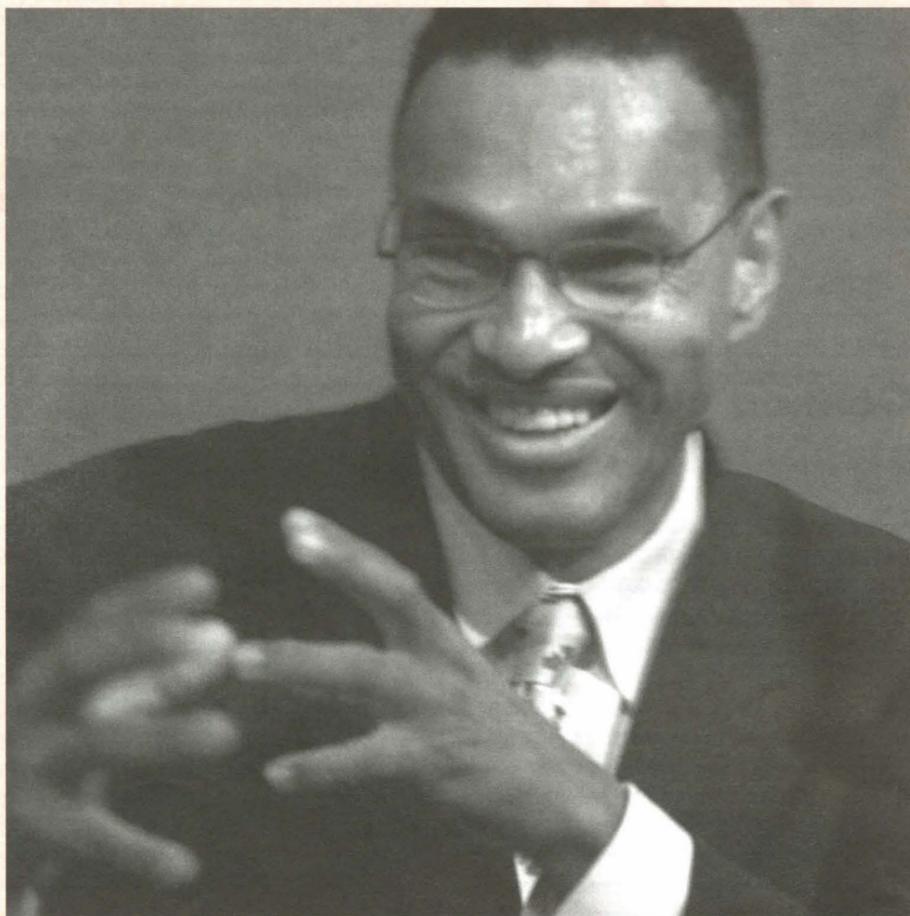
After four years as vice president for student affairs, Christopher Brennen will step down at the end of this month and return to teaching and research in mechanical engineering.

Throughout his 33 years at Caltech, Brennen has been involved in improving the quality of student life, not only as dean of students and master of student houses, but by serving on many committees during his time as associate professor and full professor. In 1992, grateful students thanked him with a bench situated between Ricketts and Fleming houses.

Student Affairs includes a wide range of offices and programs, from athletics, admissions and financial aid to the registrar's office and residence life. The office of the vice

see *Brennen*, page 6

# NewsBriefs



Freeman Hrabowski, president of the University of Maryland, Baltimore County, stressed the importance of mentoring in helping minority students to succeed in math, science, and engineering. He gave the first lecture of a series on diversity on January 15 in Beckman Institute Auditorium.

## Honors and awards

**Andrew Benson**, Caltech Prize Fellow in Astronomy, has been awarded the 2001 Michael Penston Prize, which is presented annually by the Royal Astronomical Society. The award honors the best astronomy PhD thesis in the United Kingdom.

**James Morgan**, Goldberger Professor of Environmental Engineering Science, Emeritus, presented the Walter J. Weber Jr. Distinguished Lecture in Environmental Engineering at the University of Michigan, Ann Arbor, on March 30, 2001. He also gave a lecture on environmental science in the National Science Foundation Engineering Research Highlight Series, on September 13, 2001.

**Ned Munger**, professor of geography, emeritus, has received the Gandhi-King-Ikeda Award from the Martin Luther King, Jr. International Chapel and the Gandhi Institute for Reconciliation, Morehouse College. Honoring individuals who actively promote peace and unity, the award reads: "In the tradition of Mohandas K. 'Mahatma' Gandhi, Dr. Martin Luther King, Jr. and Dr. Daisaku Ikeda, you have served your community and the world through your dedication to peace and unity, your commitment to non-violence, and your persistent efforts to establish justice for all humankind."

**Anneila Sargent**, professor of astronomy and director of both the Owens Valley Radio Observatory and the Interferometry Science Center, has been invited to deliver the Graham Lecture at University College, Toronto.

**Erik Winfree**, assistant professor of computer science and computation and neural systems, is a recipient of the Presidential Early Career Award for Scientists and Engineers. The program recognizes outstanding young professionals at the outset of their independent research careers.

## Personals

### Welcome to Caltech

#### November

**Mark Abajian**, applications developer, Physics, Mathematics and Astronomy; **Aysin Babaoglan**, research aide A, biology; **Rajesh Balasubramaniam**, data warehouse developer, Administrative Technology Center; **Jennifer Herstein**, applications developer, Physics, Mathematics and Astronomy; **Joon Kang**, assistant animal lab technician, biology; **Young Mee Kim**, research assistant I, biology; **Mary Beth Mitchel-Baker**, senior auditor, Audit Services and Institute Compliance; **Edwin Soedarmadji**, software engineer, high-energy physics; **Igor Yakushin**, scientist, Laser Interferometer Gravitational-Wave Observatory (LIGO), Louisiana.

#### December

**Eric Aslakson**, software engineer, high-energy physics; **Juan Balcazar**, security shift supervisor, Security; **Robert Carroll**, managing director, computation and neural systems; **Brent Chun**, senior scientist I, Center for Advanced Computing Research (CACR); **Christina Davezan**, senior administrative secretary, Physics, Mathematics, and Astronomy; **Tomara Fuller**, general clerk, and **Yu Gao**, scientist, Space Infrared Telescope Facility (SIRTF) Science Center; **Jesus Mares**, waiter, Athenaeum; **Ryan Martin**, drug-design software engineer, chemistry; **Fidel Ortega**, waiter, Athenaeum; **Per-Olov Pettersson**, technical manager, solid-state-device physics group; **Aria Razfar** and **Marie Rodriguez**, educational researchers, Caltech Precollege Science Initiative (CAPSI); **Thomas Ryan**, security shift supervisor, Security; **Eric Santiestevan**, lab manager, biology; **Jeffrey Smith**, research assistant I, biology.

#### Retirements

**Raymundo Franco**, a plasterer in the carpenter shop, retired on February 1. He had worked at Caltech for 10 years.

**George Weal** retired February 1 after 44 years at Caltech. He was a program coordinator for campus operations.

## Deaths

**Jacquelyn Beard**, a secretary in the Division of Engineering and Applied Science, died on January 5; she was 67. She came to work at Caltech in 1968, first in aeronautics and then in mechanical engineering. She had retired in 1999. She is survived by her son, Scott; her sister, Carol Nicoloff; her brother, Bruce Hilton; and five grandchildren and one great-grandchild.

**Gordon James Stanley**, a former research associate at Caltech who was director of the Institute's Owens Valley Radio Observatory from 1965 to 1975 and a pioneer in radio astronomy, died on December 17; he was 80. His codiscovery with John Bolton in 1947 of the Cygnus A radio source helped establish the field of radio astronomy, and he came from Australia to Caltech in 1955 as a research engineer and coordinated construction of the radio telescopes at Owens Valley. He is survived by his wife, Helen; his three children, Teresa Stanley, Luise Phelps, and Stephen Stanley; and three grandchildren.

## Panels engage Caltech notables

**John Baldeschwieler**, Caltech's J. Stanley Johnson Professor and Professor of Chemistry, Emeritus, has been named to a panel of distinguished scientists and engineers that will help the federal government harness science and technology in the fight against terrorism. Established by the National Academies—the National Academy of Sciences, the National Academy of Engineering, the Institute of Medicine, and the National Research Council—the committee will delineate the range of threats to the nation's security, including targets, weapons, and delivery systems, and will propose possible points of intervention. The target date for the panel's final report is May 31.

**Alice Huang**, faculty associate in biology and senior counselor for external relations, joined more than 50 other leaders—representing a cross section of the United States—for the fifth forum of the American Assembly's *Uniting America* series. Titled "Collaborating to Make Democracy Work," the forum was held at the Skirball Cultural Center, Los Angeles, November 29–December 2, and a final meeting will be held March 1–2 at Arden House, in New York's Ramapo Mountains. Huang is a member of the series' Leadership Advisory Group. Founded by Dwight D. Eisenhower in 1950, the American Assembly is a nonpartisan affiliate of Columbia University that facilitates consensus-building among decision makers from all sectors of society regarding the nation's most critical issues. Reports of the *Uniting America* forums can be found at [www.americanassembly.org](http://www.americanassembly.org).

## Gray to address high schoolers

Harry Gray, Beckman Professor of Chemistry and founding director of the Beckman Institute, will be the second speaker in the Congressional Science Scholar Forum, presented by Congressman Adam Schiff and Caltech.

Gray will speak to high school and junior college math and science students on "The Future of Chemistry: Fuel from Sunlight and Water" on Monday, February 4, in Beckman Institute auditorium. The quarterly lecture series is designed to expose students to science opportunities by providing the opportunity to hear about personal experiences of Caltech researchers.

The inaugural forum, which took place in October, featured Morrisroe Professor of Physics and former JPL director Ed Stone. His talk, "Mars and the Search for Water," will air on Charter Communications' public-access channel 25 at 6 p.m. on January 24, 9 p.m. on January 26, and 8 p.m. on January 28.

All students who live or attend school within the 27th Congressional District have a special invitation to attend the lecture series, which is free and open to the public. For more information, contact Elizabeth Krider in Caltech's Government and Community Relations Office at ext. 8179 or [ek@caltech.edu](mailto:ek@caltech.edu).



The campus security team includes Irma Cruz, Brett Miller, Kathy Carpenter, Tom Ryan, Chief Gregg Henderson, Juan Balcazar, Deputy Chief Loren Kajitani, and Greg Powell.

## Campus security beefed up

In light of recent events, security has become a hot-button issue for managers of public spaces, airports, and university campuses nationwide. At Caltech, the security force has recently undergone changes, some of which are visible—the uniforms are now a handsome blue and gray—and others that were made to improve overall safety, according to Gregg Henderson, Chief of Campus Security and Parking Services.

Before safety became such a top priority, his office was already implementing many improvements. Saul Chapin, a consultant and chief of Northwestern University's campus security force, visited the campus in February and made several recommendations.

"Implementation of selected recommendations began in July 2001," Henderson said. "The initial move was made so that security now reports to Al Horvath, the vice president of business and finance."

For the last eight years, Caltech has contracted with GHG Security Services, which provides 20 security officers. To enhance the security office's capabilities, the Institute hired a deputy chief, four supervisors, and a department assistant, all of whom report to Henderson. The supervisors will oversee the contract force so that a Caltech employee in on campus around the clock.

Loren Kajitani was hired in November to take on the new deputy chief position. With 25 years in the security industry, she has served as a consultant to school districts and private industry.

"Loren will handle the day-to-day field operations, patrols, and provide training to officers in specific areas, from report writing to dealing with difficult situations," Henderson said. "With her on board, I'm able to devote my time to meeting with the campus community to see what their needs are. Our responsiveness is substantially better."

The security force also manages the web of cameras, access controls, and electronic security systems at the entrances to certain areas and buildings. Greg Powell, an eight-year member of the security office, has assumed the new role of security systems administrator to manage the control room located in the Holliston parking structure.

The new hires include Juan Balcazar, who had previously worked as a contract employee at Caltech for three years, Kathleen Carpenter, who has eight years of experience in security, Brett Miller, who has 12 years of experience in security and was recently a field supervisor, and Tom Ryan, the former director of security for a small college in southern Vermont.

In addition, this week marks the debut of the new campus security web page, located at [www.security.caltech.edu](http://www.security.caltech.edu). Security bulletins, personnel profiles, weekly updated incident reports, and emergency numbers can be found there.

"The last few months have been an exciting time for the Security Department," Henderson said. "The additions and changes will bring us to that next level of service to the campus community."

# January 28–February 3, 2002

M T W T F S S

## Monday, January 28

### Aeronautics Seminar

101 Guggenheim Laboratory, Lees-Kubota Lecture Hall, 1 p.m.—“Technical and Financial Aspects of Reusable Launch Vehicles,” Edward Ruth and John Skratt, the Aerospace Corporation. Information: [www.galcit.caltech.edu/seminars.shtml](http://www.galcit.caltech.edu/seminars.shtml).

### Special Kellogg Seminar

Lauritsen Library, 2 p.m.—“Few-Body Physics in Effective Field Theory,” Hans-Werner Hammer, department of physics, Ohio State University.

### Computation and Neural Systems Seminar

24 Beckman Labs, 4 p.m.—“Crowding and Object Integration within the Receptive Field of V4 Neurons,” Brad C. Motter, research physiologist, Veterans Affairs Medical Center, Syracuse, New York.

### General Biology Seminar

119 Kerckhoff, 4 p.m.—“Structural Study of Macromolecular Assemblies and Membrane Events,” Peter Rosenthal, Laboratory of Molecular Biology, MRC, United Kingdom.

### Geology and Planetary Sciences Seminar

155 Arms, Robert Sharp Lecture Hall, 4 p.m.—Topic to be announced. Yaron Katzir, department of geology and geophysics, University of Wisconsin–Madison. Information: [www.gps.caltech.edu](http://www.gps.caltech.edu).

### Inorganic-Electrochemistry Seminar

147 Noyes, Sturdivant Lecture Hall, 4 p.m.—“NMR Investigations of Cytochrome *c* Folding, Dynamics, and Thermostability,” Kara Bren, assistant professor, department of chemistry, University of Rochester.

## Tuesday, January 29

### Caltech Library System Presents: Structure Searching Quick Review

Sherman Fairchild Library, multimedia conference room, noon to 1:30 p.m.—Learn to search chemical structures and reactions, as well as display and print compound records. Information and registration: <http://library.caltech.edu/learning/form.htm>. Open to Caltech community members only.

### CACR/ASCI Seminar

Powell-Booth Room 100, 3 p.m.—“An Experiment Using Life-Sized HDTV,” Paul DeFlorio, JPL. Information: [www.cacr.caltech.edu/calendar/seminars](http://www.cacr.caltech.edu/calendar/seminars).

### Institute for Quantum Information

74 Jorgensen, 3 to 4:30 p.m.—“Quantum Correlated Source Coding,” Andreas Winter, research associate in computer science, University of Bristol.

### Mechanical Engineering Seminar

206 Thomas, 3 p.m.—“Mechanics and Materials Issues in the Next Generation of Orthopedic Implant,” Jim Mason, associate professor, aerospace and mechanical engineering department, University of Notre Dame. Information: [www.me.caltech.edu/seminars.html](http://www.me.caltech.edu/seminars.html).

### Carnegie Observatories Colloquium Series

William T. Golden Auditorium, 813 Santa Barbara Street, 4 p.m.—“Metallicity Profiles in Spiral and Irregular Galaxies,” Don Garnett, assistant astronomer, Steward Observatory, University of Arizona. Refreshments, 3:30 p.m.

### Chemical Physics Seminar

147 Noyes, Sturdivant Lecture Hall, 4 p.m.—“Dynamics of Molecular Structures by Multiple Pulse Two-Dimensional Infrared Spectroscopy: Exploring the IR Analogs of NMR,” Robin M. Hochstrasser, Donner Professor of Physical Sciences, department of chemistry, University of Pennsylvania.

### Weigle Lecture

119 Kerckhoff, 4 p.m.—“Molecular Chaperones in the Cytosol: From Nascent Chains to Folded Proteins,” Ulrich Hartl, department of cellular biochemistry, Max Planck Institute of Biochemistry, Martinsried, Germany.

## Wednesday, January 30

### Mathematical Physics Seminar

351 Sloan, noon—“Fractional Moment Methods for Finite Rank Perturbations,” Robert Sims, UC Irvine. Information: [www.math.caltech.edu/events/mathphys.html](http://www.math.caltech.edu/events/mathphys.html).

### Chemical Engineering Seminar

106 Spalding Lab, Hartley Memorial Seminar Room, 2 p.m.—“Redox-Active and Inactive Nanostructures on Metal and Semiconductor Surfaces,” Albena Ivanisevic, department of chemistry and Institute for Nanotechnology, Northwestern University. Refreshments, 113 Spalding Lab, 1:30 p.m. Information: [www.cheme.caltech.edu/seminars/seminars.html](http://www.cheme.caltech.edu/seminars/seminars.html).

### Astronomy Colloquium

155 Arms, Robert Sharp Lecture Hall, 4 p.m.—“The Search for Black Hole Event Horizons,” Ramesh Narayan, professor of astronomy, Harvard University. Information: <http://astro.caltech.edu/~jlc/colloquia.html>.

### Bristol-Myers Squibb Lecturer in Organic Synthesis

153 Noyes, Sturdivant Lecture Hall, 4 to 5:30 p.m.—“Discovery of Asymmetric Catalysts,” Professor Eric N. Jacobsen, department of chemistry and chemical biology, Harvard University.

### Environmental Science and Engineering Seminar

142 Keck, 4 p.m.—“The Weak Temperature Gradient Approximation for Tropical Atmospheric Dynamics,” Adam Sobel, assistant professor, department of applied physics and applied mathematics, and department of earth and environmental sciences, Columbia University. Refreshments, Keck lobby, 3:40 p.m. Information: [www.ese.caltech.edu/seminars.html](http://www.ese.caltech.edu/seminars.html).

## Thursday, January 31

### Carnegie Observatories Colloquium Series

William T. Golden Auditorium, 813 Santa Barbara Street, 4 p.m.—“The Evolution of the Narrow Line Region in Active Galaxies,” Professor Mike Dopita, Australian National University. Refreshments, 3:30 p.m.

### Civil Engineering Seminar

206 Thomas, 4 p.m.—“Probabilistic Models and Fragility Estimates for Structural Components and Systems,” Paolo Gardoni, department of civil and environmental engineering, UC Berkeley. Refreshments, 210 Thomas, 3:45 p.m.

### Geoclub Seminar

151 Arms, Buwalda Room, 4 p.m.—“Thermochronology of the Lower Crust and Its Constraints on Continental Lithospheric Evolution,” Mark Schmitz, department of earth, atmospheric, and planetary sciences, MIT. Refreshments, 3:45 p.m.

### Physics Research Conference

201 E. Bridge, 4 p.m.—“Recent Results on Neutrino Mass and Oscillation from Super-Kamiokande and K2K,” Kate Scholberg, assistant professor of physics, MIT. Refreshments, 108 E. Bridge, 3:45 p.m. Information: [www.pma.caltech.edu/~physcoll/PhysColl.html](http://www.pma.caltech.edu/~physcoll/PhysColl.html).

### Science, Ethics, and Public Policy Seminar

25 Baxter, 4 p.m.—“Some Recent Philosophical Applications and Misapplications of Probability,” Branden Fitelson, acting assistant professor, department of philosophy, Stanford University. Refreshments. Information: [www.hss.caltech.edu/ses/index.html](http://www.hss.caltech.edu/ses/index.html).

## Friday, February 1

### Fluid Mechanics Seminar 101

Guggenheim Laboratory, Lees-Kubota Lecture Hall, 3 p.m.—“Exploratory Studies of Turbulence/Chemistry Interaction in Hypersonic Flows,” Professor Pino Martin, mechanical and aerospace engineering department, Princeton University. 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.—“Electron Transfer in Rhenium-Modified Azurins,” William Wehbi, graduate student in chemistry, Caltech.

### LIGO Science Seminar

155 Arms, Robert Sharp Lecture Hall, 4 p.m.—“LIGO 40-Meter Progress,” Dennis Ugolini, postdoctoral scholar, LIGO Laboratory, Caltech.

# February 4–February 10, 2002

M T W T F S S

## Monday, February 4

### Aeronautics Seminar

101 Guggenheim Laboratory, Lees-Kubota Lecture Hall, 1 p.m.—“Fluid Instability,” Robert Benjamin, Los Alamos. Information: [www.galcit.caltech.edu/seminars.shtml](http://www.galcit.caltech.edu/seminars.shtml).

### Geology and Planetary Sciences Seminar

155 Arms, Robert Sharp Lecture Hall, 2 p.m.—“Volcanism, Impacts, and Mass Extinctions: Which Smoking Gun?” Vincent Courtillot, visiting professor of geophysics, Caltech. Information: [www.gps.caltech.edu](http://www.gps.caltech.edu).

## Tuesday, February 5

### Caltech Library System Presents: Introduction to Endnote 4.0 Citation Management Software

Sherman Fairchild Library, multimedia conference room, noon to 1:30 p.m.—Training includes building a database, searching a database, and building a bibliography using Endnote version 4.0. Advanced techniques can be covered if requested in advance. Registration: <http://library.caltech.edu/learning/form.htm>. Open to Caltech community members only.

### Chemical Engineering Seminar

106 Spalding Lab, Hartley Memorial Seminar Room, 4 p.m.—Topic to be announced. Matt DeLisa, department of chemical engineering, University of Texas at Austin. Refreshments, 113 Spalding Lab, 3:30 p.m. Information: [www.cheme.caltech.edu/seminars/seminars.html](http://www.cheme.caltech.edu/seminars/seminars.html).

### Chemical Physics Seminar

147 Noyes, Sturdivant Lecture Hall, 4 p.m.—Topic to be announced. Scott Fraser, Rosen Professor of Biology, Caltech.

## Wednesday, February 6

### Mathematical Physics Seminar

351 Sloan, noon—“Sparse Potentials with Fractional Hausdorff Dimension,” Andrej Zlatoš, graduate student 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.—“Galactic Evolution of Oxygen,” Garik Israelian, associate astrophysicist, Institute of Astrophysics of Canary Islands. Information: <http://astro.caltech.edu/~jlc/colloquia.html>.

### Bristol-Myers Squibb Lecturer in Organic Synthesis

153 Noyes, Sturdivant Lecture Hall, 4 to 5:30 p.m.—“Mechanistic Studies in Asymmetric Catalysis,” Professor Eric N. Jacobsen, department of chemistry and chemical biology, Harvard University.

### Environmental Science and Engineering Seminar

142 Keck, 4 p.m.—“The Role of the Tropics in the Onset of Ice Ages (Is Ice Incidental to the Ice Ages?),” George Philander, professor of geosciences, Princeton University. Refreshments, Keck Lobby, 3:40 p.m. Information: [www.esse.caltech.edu/seminars.html](http://www.esse.caltech.edu/seminars.html).

## Thursday, February 7

### Civil Engineering Seminar

206 Thomas, 4 p.m.—“Structural Response Modification Using Magneto-rheological Devices,” Shirley Dyke, associate professor, department of civil engineering, Washington University in St. Louis. Refreshments, 210 Thomas, 3:45 p.m.

### Geoclub Seminar

151 Arms, Buwalda Room, 4 p.m.—Topic to be announced. Jared Leadbetter, assistant professor of environmental microbiology, Caltech. Refreshments, 3:45 p.m. Information: [www.gps.caltech.edu/seminars/geoclub/](http://www.gps.caltech.edu/seminars/geoclub/).

### Physics Research Conference

201 E. Bridge, 4 p.m.—“Earthshine,” Steven Koonin, professor of theoretical physics and provost, Caltech. Refreshments, 108 East Bridge, 3:45 p.m. Information: [www.pma.caltech.edu/~physcoll/PhysColl.html](http://www.pma.caltech.edu/~physcoll/PhysColl.html).

### Science, Ethics, and Public Policy Seminar

25 Baxter, 4 p.m.—“Not Just Another Species of Large Mammal: The Peculiarities of Being Hominid,” Kim Sterelny, visiting professor of philosophy, Caltech. Refreshments. Information: [www.hss.caltech.edu/ses/index.html](http://www.hss.caltech.edu/ses/index.html).

## Friday, February 8

### Fluid Mechanics Seminar

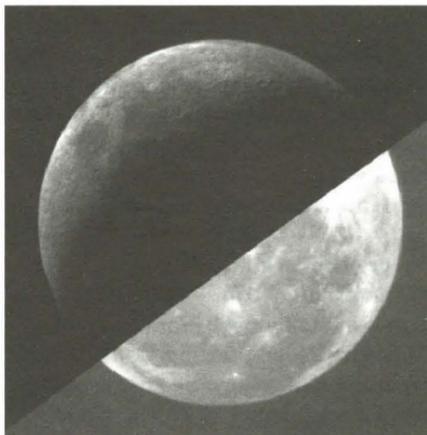
101 Guggenheim Laboratory, Lees-Kubota Lecture Hall, 3 p.m.—Topic to be announced. Professor Gary Leal, chemical engineering department, UC Santa Barbara. Information: [www.galcit.caltech.edu/Seminars/Fluids/CurrentFluids/index.html](http://www.galcit.caltech.edu/Seminars/Fluids/CurrentFluids/index.html).

### Inorganic-Organometallics Seminar

151 Crellin, 4 p.m.—“The Palladium-Catalyzed Oxidative Kinetic Resolution of Secondary Alcohols and Other Oxidations with Molecular Oxygen,” Eric Ferreira, graduate student in chemistry, Caltech.

### LIGO Science Talk

155 Arms, Robert Sharp Lecture Hall, 4 p.m.—Topic to be announced. Szabolcs Marka, postdoctoral scholar, LIGO laboratory, Caltech.



A dark-side image of the moon from February 5, 1995 reveals “earthshine,” the topic of Professor Steven Koonin’s lecture for the Physics Research Conference on Thursday, February 7, at 4 p.m.

## Resumania, Career Day coming soon

Grads, students, postdocs, and other job seekers can get a jump start on their search with two upcoming events, sponsored by Caltech’s Career Development Center. Both events are open to the Caltech community.

Resumania will take place on Friday, January 25, from 11 a.m. to 2 p.m. on the Olive Walk, where Caltech career counselors and alumni will review résumés and offer suggestions. The event is a good opportunity to prepare for Caltech’s annual Career Day, which follows on its heels.

This year’s Career Day will be held on Thursday, January 31, from 10:30 a.m. to 2:30 p.m. at Brown Gymnasium. Organizations currently scheduled to appear include the Genomics Institute of the Novartis Research Foundation, Intel Corporation, Lawrence Livermore National Laboratory, MIT Lincoln Laboratory, Microsoft Corporation, Motorola Life Sciences, Northrop Grumman, the Peace Corps, Raytheon, and the Salk Institute.

“Employers like career fairs because they can meet and greet students for a few minutes, describe their company and opportunities, and collect résumés for follow-up,” said Jerry Houser, director of the Career Development Center. Employers seek Caltech candidates at all levels—from undergrads for summer internships to recent graduates and postdocs.

This year’s Career Day, impacted by September 11 and the economic downturn, will include about 50 companies—down from an average of 75 to 100 in the late 1990s. Many companies have put a freeze on campus hiring, or still have travel restrictions that prevent out-of-town representatives from attending.

Thus, Houser emphasized, with nearly 50 percent fewer companies attending, “students need to be more aggressive in their job search than they have in past years. The good news is that jobs are still out there. But students are likely to obtain fewer offers, and may find it more competitive.”

On the plus side, Houser said, is that “our students have tremendous skills and aptitudes, and employers know it. No Caltech student should go unemployed, even in this market.” He urged students to visit the Career Development Center Web site ([www.career.caltech.edu](http://www.career.caltech.edu)) to sign up for workshops and information sessions.

“Students need to start their job search effort now,” he said. “They can’t afford the dirty little ‘p’ word . . . procrastination.”

For more information on Resumania or Career Day, contact the Career Development Center at ext. 6361 or [career@caltech.edu](mailto:career@caltech.edu).

# CampusEvents

## Monday, January 28

### Ballroom Dance Club

Winnett lounge, 7:30 to 9 p.m.—Viennese waltz for beginners, professionally taught. This is the fourth of a five-week series on Monday evenings. No partner is required. Fee: \$6 a lesson for Caltech students; \$8 a lesson for others. Refreshments and a half-hour practice period will follow each class.

### Ballroom Dance Mini Party

Winnett lounge, 9 to 11 p.m.—Open dancing; make requests or bring your own music. The first half-hour coincides with the Viennese waltz practice session. No partner is required. Refreshments.

## Tuesday, January 29

### Photoshop for Researchers

New Media Classroom, 363 S. Hill Avenue, 10 a.m. to noon—This two-day workshop teaches practical techniques to researchers who use Photoshop: image enhancement, resolution, layout, preparing work for publication, and file formats. The second class is on January 31. Information: <http://twing.caltech.edu/workshops>. Open to Caltech community members only.

### Caltech Folk-Dancing Club

Dabney Lounge, 7:30 p.m.—Meets every Tuesday until midnight. Drop-ins are welcome. Donations accepted.

### The Caltech Tai Chi Club

Winnett lounge, 7:30 to 9 p.m.—Meets Tuesdays and Fridays weekly. Sessions are free. Information: [www.its.caltech.edu/~taichi/](http://www.its.caltech.edu/~taichi/).

### Women's Basketball

at University of La Verne, 7:30 p.m.

### Lyrical Jazz Dance Class

Braun Gym, multipurpose room, 10 p.m.—The Caltech Dance Troupe sponsors an intermediate level lyrical jazz dance class. Open to members of the Caltech community with Athletic Center membership. Some prior dance experience is required. The cost is \$20 per term for Caltech students and \$30 per term for nonstudents.

## Wednesday, January 30

### Men's Tennis

vs. University of La Verne, 3 p.m.

### Ballroom Dance Club

Winnett lounge, 7:30 to 9 p.m.—American rumba for beginners, amateur-taught. This is the fourth of a five-week series running on Wednesday evenings. No partner is required. Fee: \$1 a lesson; free for freshmen or those getting PE credit. Refreshments and a half-hour practice period will follow each class.

### Men's Basketball

at University of La Verne, 7:30 p.m.

## Thursday, January 31

### Blood Drive

Winnett lounge, 10 a.m. to 4 p.m.—Appointments: Diana Alvarez, 395-6001 or [diana.alvarez@caltech.edu](mailto:diana.alvarez@caltech.edu). Walk-ins are welcome.

### Photoshop for Researchers

New Media Classroom, 363 S. Hill Avenue, 10 a.m. to noon—This is the second day of a two-day workshop teaching practical techniques to researchers using Photoshop. Information: <http://twing.caltech.edu/workshops>. Open to Caltech community members only.

### Career Day 2002

Brown Gymnasium, 10:30 a.m. to 2:30 p.m.—Meet with company representatives in an informal setting. Bring copies of your résumé and make a connection. Information: 395-6361 or [career@caltech.edu](mailto:career@caltech.edu).

## Friday, February 1

### Men's Golf

at University of Redlands, 10 a.m.

### Men's Tennis

at Cal Lutheran University, 2 p.m.

### Baseball

vs. Cal State Monterey Bay, 3:30 p.m.

### Caltech Women's Club Welcoming Happy Hour

Athenaeum Rathskeller, 4:30 to 6 p.m.—New and current members of the Caltech/JPL community are invited to meet friendly people and learn about the Women's Club and its activities.

### The Caltech Tai Chi Club

Winnett lounge, 7 to 9 p.m.—Meets Tuesdays and Fridays weekly. Sessions are free. Information: [www.its.caltech.edu/~taichi/](http://www.its.caltech.edu/~taichi/).

### Women's Basketball

at University of Redlands, 7:30 p.m.

### Winter Chamber Music Series

Dabney Lounge, 8 p.m.—Caltech students will perform a variety of music for small ensembles, with a different program for each concert in the series. A reception will follow the concert.

## Saturday, February 2

### Track and Field

Roadrunner Invitational, at Cal State Bakersfield, 9 a.m.

### Women's Tennis

at Occidental College, 9:30 a.m.

### Baseball

vs. Simpson College, doubleheader, 11 a.m.

### Swimming and Diving

at University of La Verne, 11 a.m.

### Ballet Classes

Braun Gym, multipurpose room, 1 to 3:30 p.m.—The Caltech Dance Troupe offers free ballet classes to members of the Caltech community with Athletic Center membership. No prior dance experience or special shoes or clothing are required for the beginner's class. Intermediate dancers meet from 1 to 2:30, beginners from 2:30 to 3:30.

### Men's Basketball

vs. Pomona-Pitzer College, 7:30 p.m.

## Sunday, February 3

### Super Bowl Alternative Concert

Dabney Lounge, 3:30 p.m.—Caltech students will present music for small ensembles, in their annual concert held during the Super Bowl. A reception will follow the concert.

## Monday, February 4

### Ballroom Dance Club

Winnett lounge, 7:30 to 9 p.m.—Viennese waltz for beginners, professionally taught. This is the last class of a five-week series. No partner is required. Fee: \$6 a lesson for Caltech students; \$8 a lesson for others. Refreshments and a half-hour practice period will follow.

### Ballroom Dance Mini Party

Winnett lounge, 9 to 11 p.m.—Open dancing; make requests or bring your own music. The first half-hour coincides with the Viennese waltz practice session. No partner is required. Refreshments.

## Tuesday, February 5

### Video Editing and DV Overview

New Media Classroom, 363 S. Hill Avenue, 10 a.m. to noon—A two-day workshop covering the basics of video capture and editing using Adobe Premiere. The second class will be held on Thursday of this week. Information: <http://twing.caltech.edu/workshops>. Open to Caltech community members only.

### Caltech Folk-Dancing Club

Dabney Lounge, 7:30 p.m.—Meets every Tuesday until midnight. Drop-ins are welcome. Donations accepted.

### Women's Basketball

vs. Pomona-Pitzer College, 7:30 p.m.

### Lyrical Jazz Dance Class

Braun Gym, multipurpose room, 10 p.m.—The Caltech Dance Troupe sponsors an intermediate level lyrical jazz dance class. Open to members of the Caltech community with Athletic Center membership. Some prior dance experience is required. The cost is \$20 per term for Caltech students and \$30 per term for nonstudents.

## Wednesday, February 6

### Men's Golf

vs. University of La Verne, at Sierra La Verne, 12:30 p.m.

### Women's Tennis

at University of La Verne, 2 p.m.

### Ballroom Dance Club

Winnett lounge, 7:30 to 9 p.m.—American rumba for beginners, amateur-taught. This is the last class of a five-week series. No partner is required. Fee: \$1 a lesson; free for freshmen or those getting PE credit. Refreshments and a half-hour practice period will follow.

### Men's Basketball

at Claremont-Mudd-Scripps, 7:30 p.m.

## Thursday, February 7

### Video Editing and DV Overview

New Media Classroom, 363 S. Hill Avenue, 10 a.m. to noon—The second day of a two-day workshop covering the basics of video capture and editing using Adobe Premiere. Information: [twing.caltech.edu/workshops](http://twing.caltech.edu/workshops). Open to Caltech community members only.

## Friday, February 8

### Men's Tennis

at Pomona-Pitzer College, 2 p.m.

### Women's Tennis

vs. Pomona-Pitzer College, 3 p.m.

### Women's Basketball

vs. Cal Lutheran University, 7:30 p.m.

### Samulnori Korean Drums

Beckman Auditorium, 8 p.m.—A percussion quartet performing Korean music and dance. 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).

## Saturday, February 9

### Men's Tennis

vs. University of Redlands, 9:30 a.m.

### Women's Tennis

at University of Redlands, 9:30 a.m.

### Fencing

UC Santa Barbara Tournament, at UC Santa Barbara, 10:30 a.m.

### Swimming and Diving

vs. Chapman University, 11 a.m.

### Ballet Classes

Braun Gym, multipurpose room, 1 to 3:30 p.m.—The Caltech Dance Troupe offers free ballet classes to members of the Caltech community with Athletic Center membership. No prior dance experience or special shoes or clothing are required for the beginner's class. Intermediate dancers meet from 1 to 2:30, beginners from 2:30 to 3:30.

### Baseball

vs. alumni, 2 p.m.

### Tomás Kubínek: Certified Lunatic and Master of the Impossible

Beckman Auditorium, 2 p.m.—In his one-man show, magician and acrobat Tomás Kubínek resembles a mad professor who has taken a bit too much of his own medicine. 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).

### Men's Basketball

at Cal Lutheran University, 7:30 p.m.

### Ballroom Dance Club's Viennese Waltz Night

Dabney Lounge, 8 to 11 p.m.—A festive night of waltzes and polkas of the 1840s–1870s, featuring the Occidental-Caltech Orchestra. In addition to open dancing, a choreographed piece will be performed by the Occidental Folk and Historic Dance Troupe. Semiformal attire, black tie optional. Refreshments served. Admission is free.

## Sunday, February 10

### Paco A. Lagerstrom Chamber Music Concert

Beckman Auditorium, 3:30 p.m.—Scott Graff, baritone, accompanied by Lisa Sylvester, will present music for the pre-Lenten festival of Carnival. 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).



Tomás Kubínek ("Certified Lunatic and Master of the Impossible") will be performing his one-man show on Friday, February 9, at Beckman Auditorium.

**Brennen, from page 1**

president for student affairs oversees the undergraduate and graduate deans, the counseling and health centers, minority student affairs, and other offices that provide services for undergraduate and graduate students.

Brennen's immediate predecessor was Professor Gary Lorden, who held that position for eight years. President David Baltimore has asked Lorden to assume an interim role while the Institute searches for Brennen's successor.

Lorden said that the position is one with which he's quite familiar.

"I really enjoyed the eight years as vice president, but—no understatement—I was thrilled to return to the life of a math professor at Caltech," he said.

Although he had made arrangements for a spring term sabbatical and an April trip to Paris with his wife, Lorden gave up those plans and agreed to tackle this demanding job. He noted with pleasure the prospect of working again with Assistant Vice President for Student Affairs Sharyn Slavin Miller, who has responsibility for a large part of the organization.

"I expect to spend the next half year working with Dr. Miller and my other colleagues in the administration to help Caltech get through an important transition period," Lorden said. "I will help in any way that I can to make sure that we keep finding effective ways to address issues."

"There's a lot going on at Caltech, and I want to contribute what I can, but obviously it will be up to Chris's successor to lead Student Affairs in establishing long-term plans."

Lorden had nothing but praise for Brennen. "I greatly admire what my friend Chris Brennen brought to the job and what he has accomplished in four years, not to mention the personal sacrifices he has made to serve Caltech and our students."

**Earthquakes 101**

Caltech staff seismologist Kate Hutton explains the mechanics of a quake at Earthquakes 101, a workshop for journalists held by the U.S. Geological Survey and Public Relations.

**Women faculty, from page 1**

increasing the fraction of upper-level female administrators and proactively awarding maternity and paternity leave; and implementing a fundraising campaign centered on recruiting female faculty and students in science and engineering.

Marianne Bronner-Fraser, Ruddock Professor of Biology and Caltech's first female faculty chair, said, "The committee did a wonderful job. This report is unique in that (1) it looks at both women's and men's issues within the Caltech community, and (2) it comes up with concrete and feasible recommendations that can be used as a model to improve the quality of the Caltech environment."

Sargent said, "Overall, response to the survey has been very positive. The report was presented to the Faculty Board this month, and it appeared the reaction was favorable. The president, provost, and division chairs were supportive of the recommendations, especially the hiring goal."

She noted a contrast from the widely publicized 1999 MIT study that found patterns of gender discrimination and that inspired the Institute survey. "The difference is that MIT went in believing that inequities existed. The Caltech report is more exploratory."

Negative reaction to the report has been minimal, Sargent said. A few are concerned, for example, that if women are hired with specially raised funds, they might be stigmatized or seen as tokens. She acknowledged the validity of such concerns, noting the importance of careful implementation of proposed changes.

One letter to the *Pasadena Star-News* criticized "dissatisfied Caltech women" for seeking "quotas," saying it would lower teaching standards. To such attitudes, Sargent said, "I think someone just didn't understand the academic environment. We're not trying to set a quota. But the fact is that we're excluding a large percentage of the population who could be doing good work." Bronner-Fraser summed up, "The author completely misinterpreted our intent. Our goal is to attract and recruit the very best applicants to Caltech. Currently, we may be losing some excellent individuals to our peer institutions. In fact, the fear is that some women may not apply to Caltech due solely to the fact that our gender balance is low."

"By increasing the numbers of women and minority professors at Caltech, we will create a positive atmosphere not only for the faculty but also for mentoring the next generation. This in turn will increase the numbers of excellent potential candidates for the future."

The full report can be downloaded from Caltech's Diversity Web site at <http://diversity.caltech.edu/>.

**Huntington's, from page 1**

bind with a particular site, normally to kill the antigen. Khoshnan and his colleagues made an antibody that binds to the polyQ site, along with another antibody that binds to a different site, called polyP. The idea was to block either of these sites and see whether the toxic effects of mutant htt, which kills nerve cells in the brain, could be blocked.

"We knew that the polyQ site was critical because when it is expanded by mutation it causes HD," says Patterson. "It was also known that the polyP site on htt might be important for interfering with the functions of other proteins." The investigators produced a modified version of the antibodies that would allow them to be produced inside cells that also carry the toxic mutant htt. They found a key result: when the antibody against the polyP site is produced by cells carrying mutant htt, the cells are "rescued," or unaffected by the toxic HD protein. In striking contrast, when cells carrying the toxic htt are induced to produce the antibody against the polyQ site, the toxicity of htt is enhanced and the cells die even faster.

Khoshnan and coworkers suggest that the surprising result with the polyQ antibody may be due to the antibody stabilizing a shape of the mutant htt protein in its most deadly form. Most important, though, says Patterson, is that the rescue of the cells producing the polyP antibody may indicate this is the site of the toxic htt in which the actual killing of cells takes place, and that covering it up with an antibody saves the cell. "Or, an alternative interpretation is that the binding of the antibody preserves the protein in a nontoxic shape," he says.

The researchers have two goals in mind with their work: elucidating the mechanism of neuronal death caused by mutant htt, and devising molecular strategies for blocking its toxic effects.

To arrive at their results, the scientists first developed eight monoclonal antibodies (mAbs), finding the three that either inhibited or exacerbated the toxicity of the mutant Htt protein. They next cloned the antigen-binding "domains" of the three; that is, the portion of the mAbs that does the actual binding. Finally, they caused these domains to be produced inside cells that were also making the mutant htt.

"Potentially, this knowledge could be useful in designing a therapeutic drug, one that covers up that part of the mutant protein that kills healthy cells," says Patterson. "The next stage of the work will be to deliver this antibody into the brains of mice that carry the human mutant gene and that have developed motor symptoms that are related to the disease. We want to see if this antibody can rescue these mice, even after they show signs of the disease. These experiments are, however, just beginning."

**Transgenic mice, from page 1**

According to Baltimore, the use of the HIV-like viruses could prove far superior to the current method of producing transgenic animals by pronuclear injection.

"It's surprising how well it works," says Baltimore, whose Nobel Prize-winning research on the genetic mechanisms of viruses 30 years ago is central to the new technique. "This technique is much easier and more efficient than the procedure now commonly in use, and the results suggest that it can be used to generate other transgenic animal species."

The technique exploits features of lentiviruses, HIV-like viruses made incapable of causing AIDS, to carry new genes into the cell's existing genome. In this case, newly fertilized mouse eggs were engineered to carry the green fluorescent protein (GFP) derived from jellyfish.

Baltimore and his team developed two ways of introducing the lentivirus into cells: microinjection of the virus under the layer that protects recently fertilized eggs, or incubation of denuded fertilized eggs in a concentrated solution of the virus. The transgenic mice, once they are born, carry a protein marker in all body tissues that make them glow green under a fluorescent light. The trait is a permanent feature of the animal's genome, and thus is carried throughout life and is inheritable by offspring.

Transgenics holds promise because the techniques can be used to "engineer" new, desirable traits in plants and animals. A transgenic chicken, for example, might produce eggs low in cholesterol. In experimental biology, transgenic animals are valuable in the laboratory for fundamental research. According to Baltimore, the procedure works on rats as well as mice, a huge advantage because of the many applications in which rats are preferable.

**Kremers, from page 1**

Kremers wrapped the man's arms around a buoy dropped by the helicopter.

"He was conscious, but couldn't talk or tell me if there were others," he said. Kremers stayed with the man until help came. A Coast Guard helicopter airlifted the man to nearby Scripps Hospital.

The *Los Angeles Times* reported that the plane—carrying a couple, Celina and Edward Muhammad, and pilot Jamal Muhammad—was returning to Hawthorne from San Diego. On its return, the plane experienced engine trouble and was headed to Carlsbad when it crashed. The woman's body was found nearby, but efforts to find Edward Muhammad, 25, were unsuccessful. The pilot, Jamal Muhammad, 26, was expected to recover from severe hypothermia.

Kremers swam back to shore with the lifeguards, capping a day he began by treating himself to a day of surfing and finished by giving a gift to a total stranger.

**Caltech 336**

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