

Caltech 336

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

The campus community biweekly

October 18, 2001, vol. 1, no. 15

A show of solidarity



Construction workers on the Broad Center for the Biological Sciences join countless Americans who have adorned buildings, cars, and freeway overpasses with flags in the wake of the September 11 terrorist attacks.

Job reclassifications under way

Since late 2000, staff members in the Human Resources compensation unit, led by Director of Compensation Elizabeth Loftus, have been at work developing a new classification structure and evaluation process for staff jobs. Their goal: to replace the current system of five classification structures—administrative, engineering, office and clerical, service, and technical—with a single, unified salary schedule.

Tom Schmitt, assistant vice president for human resources, says, "We hope that a unified structure will make it easier to evaluate jobs according to the skills and characteristics unique to each profession, and to compare them with similar positions at other employers with whom Caltech competes for such talent. We also hope the new structure will be easier for employees to understand and will provide clearer pathways for career development."

Often, says Schmitt, such conversions are done as one large project over a period of time, ending with a single date on which all positions are changed over. HR has chosen to approach the conversion in segments, one "job family" at a time, in order to ensure plenty of opportunity for interaction with affected groups and individuals. The process will include the development of new evaluation criteria,

see *Reclassifications*, page 6

A genome's role in a brave new world

When people jokingly repeat the old bro-mide "you can't take it with you" in reference to material possessions and the afterlife, one has to wonder if they thought to include one's genome. It's likely that very few people have ever considered their personal genetic map as a commodity that can be owned, much less patented—or stolen.

Consider this scenario: NuGenEra Inc., an imagined biotech firm, is suing Salvador Dolly, an ersatz individual. The company claims that it has patented his genome after discovering that Dolly, an ordinary man, is blessed with extraordinary genes that make him naturally resistant to AIDS. This serendipitous discovery, and the subsequent sequencing of Dolly's genome, was conducted without the subject's knowledge or consent.

But it turns out that Dolly is no Milque-toast pushover. Spurred by the promise of his potentially lucrative genes, he has assembled a team of top lawyers to wrest the ownership rights of his genome away from NuGenEra.

The result is known as "The Curious Case of Owning One's Own Genome,"

see *Genome*, page 6

International team finds galactic "building block"

An international team of astrophysicists has detected a very small, faint stellar system in the process of its formation during the first half billion years or so of the universe's existence.

The discovery is being reported in an upcoming issue of the *Astrophysical Journal*. According to lead author Richard Ellis, Caltech professor of astronomy, the faint object is an excellent candidate for the long sought after "building blocks" thought to be abundant in early times and that later assembled to make present-day galaxies.

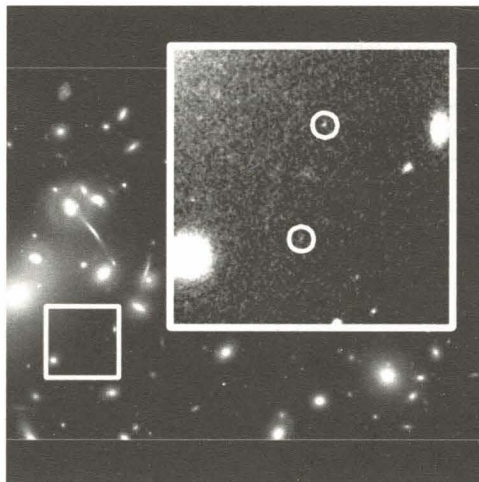
The discovery was made possible by viewing small areas of sky through a massive intervening cluster of galaxies, Abell 2218, two billion light-years away. The cluster acts as a powerful gravitational lens, magnifying distant objects and allowing the scientists to probe how distant galaxies assembled at very early times.

Gravitational lensing, a dramatic feature of Einstein's theory of general relativity, means that a massive object in the foreground bends the light rays radiating from a background object, because mass curves space. As a result, an object behind a massive foreground galaxy cluster like Abell 2218 can look much brighter because the foreground object has bent additional photons toward Earth, in much the same way that glass binocular lenses bend more photons toward the eyes.

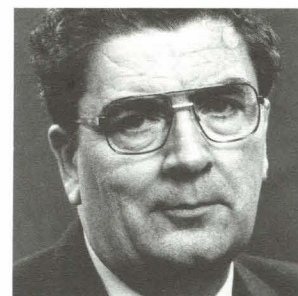
In the case of the system detected by Ellis and coworkers, the effect makes the image at least 30 times brighter than if Abell 2218 were not in the foreground. Without this boost, neither the 10-meter Keck Telescopes nor the Hubble Space Telescope would have detected the object.

Ellis explains, "Without the benefit of the powerful cosmic lens, the intriguing source would not even have been detected in the Hubble Deep Fields, historic deep exposures taken in 1995 and 1998."

see *Building block*, page 6



Hubble Space Telescope image of the galaxy cluster Abell 2218 used in the search for intrinsically faint distant star-forming systems. The image pair (inset) represents the result of a single source magnified more than 30 times by Abell 2218, seen at a distance of 13.4 billion light-years.



Nobelist Hume to be DuBridge lecturer

Nobel Prize winner and Northern Irish political leader John Hume, who regularly strode through tear gas and dodged rubber bullets in his quest for peace, will be the featured guest at Caltech's Lee A. DuBridge Distinguished Lecture. "A Conversation with John Hume" will take place Tuesday, November 20, at 8 p.m. in Beckman Auditorium. Kevin Cullen, a *Boston Globe* reporter who served as the newspaper's bureau chief in Dublin and London, will interview Hume.

Hume was the corecipient of the 1998 Nobel Peace Prize with David Trimble, leader of Ireland's Ulster Unionist party. Until recently, Hume led that country's Social Democratic and Labour Party (SDLP). The two were political rivals who set aside their differences to work toward their common goal of ending decades of religion-inspired violence in Northern Ireland. Hume is Catholic; Trimble, a Protestant.

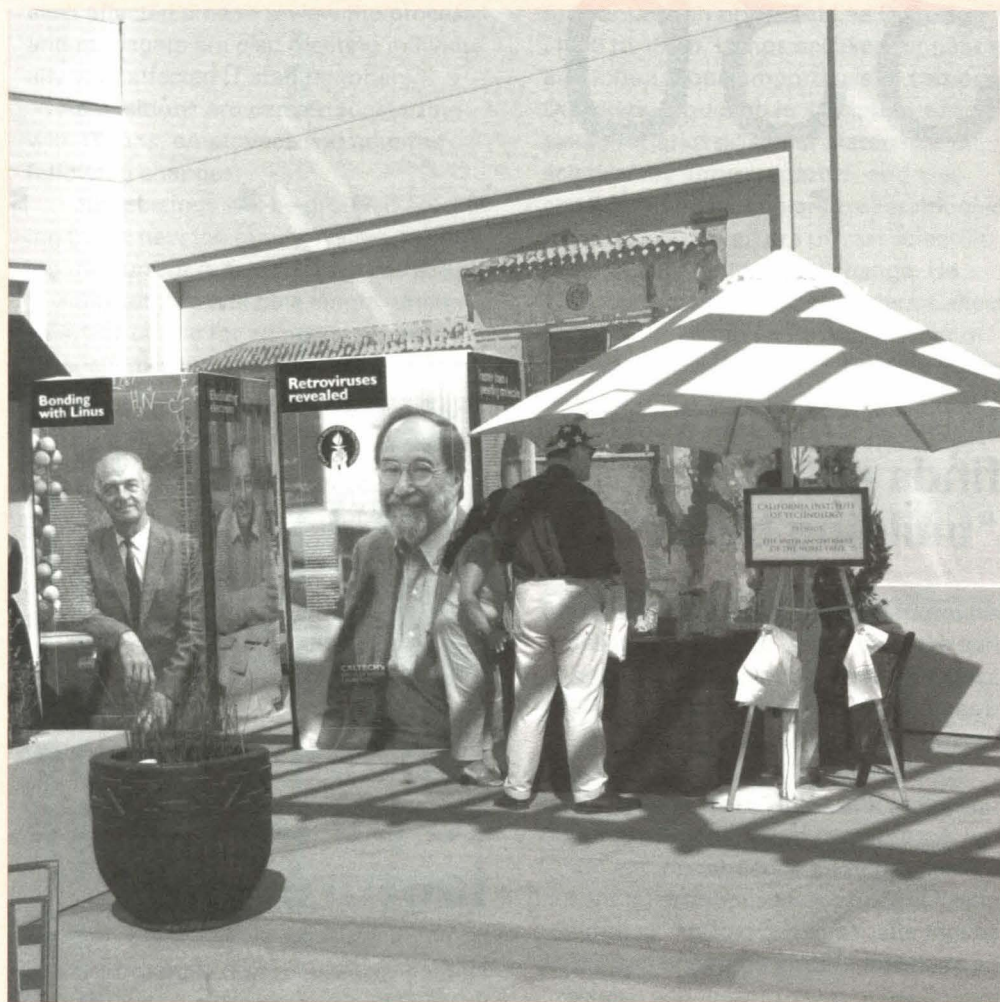
Hume has been involved in Northern Irish politics for more than 30 years as an advocate for radical but peaceful change. According to one British newspaper, he was "regularly seen in the heart of [action], striding through the tear gas or dodging rubber bullets; never afraid to confront the security forces, but always urging peaceful protest."

In 1970, he helped found the SDLP, bringing together the various strands of nonmilitant activists in Northern Ireland. In the 1980s, he approached Sinn Féin, the political party of the Provisional Irish Republican Army (IRA), the violent faction in Northern Ireland, to include them in the political process. He negotiated in secret with Gerry Adams, the Provisional IRA leader, and weathered the storm of protests that followed when his talks with terrorists became public in 1993. His negotiations with Adams, however, led to an IRA cease-fire the following year.

In 1998 Hume helped negotiate the so-called Good Friday agreement, which remains the basis for negotiations in Northern Ireland. It would allow for power sharing between the various factions, and disarmament of the IRA. Hume, 64, led the SDLP from 1979 until his resignation in September 2001. He remains a member of both the British Parliament and the European Parliament.

see *Hume*, page 6

NewsBriefs



Caltech Nobel Laureates Linus Pauling and David Baltimore were among several "introduced" to Pasadenans during the grand opening of the Paseo Colorado retail/living complex in September.

Personals

New positions

Postdoctoral scholars joining Caltech on September 1 were **Burak Aksoylu**, postdoctoral scholar in computer science; **David Bacon**, postdoctoral scholar in physics; **Justin Brooke**, postdoctoral scholar in applied physics; **Iouri Chepelev**, Sherman Fairchild Postdoctoral Scholar in Physics; **Eric Cowgill**, O. K. Earl Postdoctoral Scholar in Geology; **Teviet Crighton**, postdoctoral scholar in physics; **David Damanik**, Sherman Fairchild Postdoctoral Scholar in Mathematics; **Mohammed Dibas**, postdoctoral scholar in biology; **J. M. Geremia**, postdoctoral scholar in control and dynamical systems and physics; **Jan Honolka**, postdoctoral scholar in physics; **Eric Klavins**, postdoctoral scholar in computer science; **Irene Knuesel**, postdoctoral scholar in biology; **Matthew Pohlman**, postdoctoral scholar in applied and computational mathematics; **Mark Scheel**, Robert F. Bacher Senior Postdoctoral Scholar; **Santiago Serebrinsky**, postdoctoral scholar in aeronautics; **Jason Douglas Weibel**, postdoctoral scholar in chemistry; **Masahiro Yanagisawa**, postdoctoral scholar in control and dynamical systems; and **Johannes Zimmer**, postdoctoral scholar in mechanical engineering.

Other postdocs joining Caltech in September were **David Boyd**, postdoctoral scholar in applied physics; **Eyal Buks**, senior postdoctoral scholar in physics, who received his PhD from the Weizmann Institute of Science and who has previously been a visitor and postdoc at Caltech; **Kamil Ekinci**, senior postdoctoral scholar in physics, who received his PhD from Brown University and who has been a postdoc at Caltech since 1998; and **Philip Taylor**, postdoctoral scholar in chemical engineering, who received his PhD in 2000 from the University of Melbourne, where he served as a research officer.

A senior recruiter for Human Resources, **Barbara Rafael** joined Caltech on September 4.

Staff joining Caltech on September 10 were **Anne Kelly**, an assistant computing analyst with the Infrared Process and Analysis Center; **Jong Woo Kim**, a research assistant 1 in biology; **Amadeo Quispe**, a general helper in Dining Services; and **Shing-Lin Wang**, a research assistant 1 in geology.

On September 11 **Alan Pinkney**, an administrative assistant 1 in biology, started work at Caltech.

Joining Caltech on September 13 were **Marco Morais**, a computer analyst in space astrophysics; and **Jasvinder Nangiana**, a research aide A in biology.

Staff starting work on September 17 were **Maria Farkas**, a research assistant I in biology; **Emily Kelly**, a gardener with Physical Plant; **Peter Lin**, a manager with the Administrative Technology Center; **Lolito Low**, an administrative aide in geology; **Myrana Ochoa**, a hostess with Caltech's Dining Services; **Roselle Rios**, an administrative assistant in the president's office; **Daniel Smith**, an immigration specialist in Human Resources; **Jennifer Somerville**, a graphic arts technician for the office of public events; **Kelly Stiles**, an administrative aide in the general counsel's office; **David Thesenga**, a curriculum specialist with the Caltech Precollege Science Initiative (CAPSI); and **Sheng Wu**, an assistant scientist in chemistry.

A gardener for Physical Plant, **William Ewell** joined Caltech on September 18.

On September 19 **Clarisse Alvarez**, a department clerk A in Human Resources, started work at Caltech.

Catrinali Pitones, a Red Door host, and **George Walkel**, a coffee cart host, joined Caltech's Dining Services on September 20.

Retirements

Betty Altizer, an administrative assistant in the general counsel's office, retired on July 1. She had worked at Caltech for 27 years.

Dale Bolton, an accounting assistant in asset accounting, retired on July 1, after working at Caltech for 10 years.

Earl Dahl retired on July 1. A lab specialist in aeronautics, he had worked at Caltech for 38 years.

Joanne Huffsmith, an administrative assistant in patents and licensing, retired on July 1. She had worked at Caltech for 20 years.

Chunnian Shi, an associate scientist in chemistry, retired July 1 after 12 years at Caltech.

Donald Skelton retired on July 1. A member of the professional staff in physics, he had worked at Caltech for 33 years.

Media minute

The October issue of *Sunset* magazine features a condensed history of Caltech as well as visits with President **David Baltimore** and **Romy Wyllie**, the director of the Caltech Architectural Tour Service.

The article was prompted by the Nobel centennial celebrations earlier this month. California has the world's greatest concentration of laureates, and 27 of them have been associated with Caltech.

Baltimore was asked whether winning the Nobel in 1975 had changed his life. "I guess it must have," he replied with a scientist's cool logic. "Since there was no control study—no life where I didn't win the prize—it's hard to tell."

Caltech recently merited a mention on *Entertainment Weekly's* Web site in a section called "College Entertainment 2001."

"Find out who put these campuses on the pop culture map," blares the headline. The online page shows how a fleeting association with an MTV VJ or minor movie got colleges like UCLA, Duke, Georgetown, NYU, and Northwestern listed in this feature.

In addition, students can read about what their fellow students are "watching, reading, and listening to when they should be studying." Caltech's entry features the curious practice of "ponding," the most popular late-night snack, and the decorative importance of foil emergency blankets. The site is at www.ew.com/ew/features/010829/collegeentertain/index.html.

Benefits open enrollment under way

This year's annual enrollment period for health, dental, life, personal accident, and long-term disability insurance for 2002 began on October 10 and will continue through October 31. Changes can also be made to spending accounts for health and dependent-care expenses during this period.

Details about the various plans and employee contribution rates have been mailed to staff at their home addresses. This year, benefit elections can be made at any time on the Internet.

To view current benefits and to elect different benefits that will go into effect in January 2002, visit the Caltech home page and click on the link tagged "Announcements." Information about personal sign-on ID numbers and PINs can be found in the enrollment material and on the Web site itself. For more information, contact the Human Resources Shared Customer Service Unit at extension 6443.

CACR awarded equipment grant

Caltech's Center for Advanced Computing Research (CACR) has been awarded equipment under the jointly sponsored Intel and Hewlett-Packard (HP) Itanium-based Systems Grant program. The award comprises eight HP i2000 Itanium-based workstations, which will be used for scientific visualization applications. The value of the award totals approximately \$64,000.

FOCAL makes donation

FOCAL, the Friends of Caltech Libraries, a voluntary support group, presented a check for \$35,000 to **Anne Buck**, university librarian, at a recent library staff meeting.

Victoria Kline, FOCAL president, said that the donation represented the generous gifts of many group members. FOCAL members support an annual December holiday dinner and a spring luncheon at the Athenaeum and a campus book sale during spring quarter.

The gift will be used to purchase database files from the Institute of Scientific Information, which covers all subject areas in the humanities, arts, social sciences, science, and engineering. The Caltech libraries will thus be able to extend their social sciences collection with more than two decades' worth of entries.

FOCAL always welcomes new members. For more information, contact **K. C. McBride**, FOCAL coordinator, at (626) 395-6411.



Judy Post with her nature photos at the Red Door.

It's just in her nature

The Nature of Things, a photo exhibit by Caltech staff member Judy Post, is currently on display at the Red Door Café on campus.

Post, who is the assistant to Vice Provost David Goodstein, became interested in photography about five years ago during a vacation in England and Scotland. "I got some decent shots of old buildings and things," she says, "and I started to wonder what more I could do with this." Her specialty is portraying scenery—landscapes, seascapes, close-ups of flowers in bloom. "I just like to go out in the middle of nowhere and shoot pictures. There are lots of interesting things in nature—twisted trees, light and shadows. It seems like there's something no matter where you look."

One of Post's photos, *Colorado Train Ride*, was published last year in *America at the Millennium: Best Photos of the 20th Century*, winning the Editor's Choice award. She also recently had an exhibit at Yahaira's Café in Pasadena, and in September took part in *20,000 Portraits: An Exploration of Identity*, a joint project of the Los Angeles County Fair and UCR/California Museum of Photography. Post spent about nine hours over two days helping to shoot a world-record number of portraits during the fair's 17-day run.

"It was a great experience, as I had never used a digital camera before, nor had I tried portrait photography," she says. "The portraits I shot ranged from serious to totally goofy, and everyone had fun." The exhibit will be displayed online at <http://photo.ucr.edu/projects/20k/fair/>, and will be shown in museums around the world.

Still, the idea of being a photographer remains a novelty to Post. "I never thought people would want to buy my photos," she says. "Someone called me the other day and said, 'I just love your pictures, but I can't decide which one I want. Please pick one for me.'" She laughs. "I told her, well, you need to do that . . . you're the one who's going to live with it!"

And when her pictures do sell, it's just icing on the cake. "I mostly do it because I enjoy it," she says.

Post's photos will remain on display through December. The Red Door's hours are Monday to Friday from 7:45 a.m. to 6 p.m. For more information, contact Post at ext. 6339 or jrpost@its.caltech.edu.

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Apology . . .

A number of copies of the October 4 Caltech 336 did not get delivered due to a mechanical error in addressing. If you missed your copy and would like to receive one, please contact Debbie Bradbury at (626) 395-3630 or debbieb@caltech.edu.

October 22–October 28, 2001

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Events in roman type are open to the public
Events in *italic type* are open to the Caltech community only

Monday, October 22

Recruiters from Bayer Pharmaceutical
Center for Student Services, 8 a.m.—Recruiters will talk about Bayer and its opportunities for employment. This meeting is important to those who have signed up for interviews with the Career Center. Anyone interested in finding out more about Bayer is welcome.

Aeronautics Seminar
101 Guggenheim Laboratory, Lees-Kubota Lecture Hall, 1 p.m.—“Astrobiology: Early Evolution of Complex Organisms,” Dr. Bruce Runnegar, professor of paleontology, UCLA. Information: www.galcit.caltech.edu/seminars.shtml.

Geology and Planetary Sciences Seminar
155 Arms, Robert Sharp Lecture Hall, 4 p.m.—Topic to be announced. Professor Jean-Philippe Avouac, geological laboratory, Ecole Normale Supérieure, Paris.

William and Myrtle Harris Distinguished Lectureship in Science and Civilization
25 Baxter, 4 p.m.—“Faustus and Friends: The Renaissance Magus in Context,” Anthony T. Grafton, Henry Putnam University Professor of History, Princeton University. Refreshments.

Inorganic-Electrochemistry Seminar Series
147 Noyes, Sturdivant Lecture Hall, 4 p.m.—“Protein Mediation and Control of Electron Transfer During Oxygen Activation at the Diiron Cluster of Ribonucleotide Reductase,” J. Martin Bollinger Jr., assistant professor, department of biochemistry and molecular biology, Pennsylvania State University, University Park.

Applied and Computational Mathematics Colloquium
101 Guggenheim Laboratory, Lees-Kubota Lecture Hall, 4:15 p.m.—“Deformation of Extreme Materials,” Roderick Lakes, Wisconsin Distinguished Professor, engineering physics, University of Wisconsin–Madison. Refreshments, 3:45 p.m.

Tuesday, October 23

Caltech Library System Presents: 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 Web of Science databases. Reservations: <http://library.caltech.edu/learning/form.htm>.

Chemical Physics Seminar
153 Noyes, Sturdivant Lecture Hall, 2 p.m.—“Conical Intersections and the Spin-Orbit Interaction: A New Dimension in Conical Intersections,” Professor David Yarkony, Johns Hopkins University.

Ulric B. and Evelyn L. Bray Seminar
25 Baxter, 4 p.m.—“A Theory of Legislative Policy Making with Reconsideration,” Antonio Rangel, assistant professor of economics, Stanford University. Refreshments.

Carnegie Observatories Colloquium Series
William T. Golden Auditorium, 813 Santa Barbara Street, 4 p.m.—“Status of the Keck Interferometer and SIM Project,” Michael Shao, JPL. Refreshments, 3:30 p.m. Information: Bronagh Glaser, 304-0241 or bronagh@ociw.edu.

Wednesday, October 24

Mathematical Physics Seminar
351 Sloan, noon—“On the Application of Krein’s Ideas to the Spectral Analysis of Schrödinger Operators,” Serguei Denissov, Harry Bateman Research Instructor in Mathematics, Caltech. Information: www.math.caltech.edu/events/mathphys.html.

21st Century Pioneers of Science
Beckman Auditorium, 2:30 to 5 p.m.—Part of a statewide celebration of the Nobel Prize centennial, this afternoon’s session at Caltech is entitled “The Next Generation of Science and Scientists.” David Baltimore will give the welcoming remarks, and Nobel laureates Ed Lewis, Caltech; Rudy Marcus, Caltech; and George Olah, USC, will introduce the presenters. Admission is free. For further details, please see www.events.caltech.edu/nobel/.

Institute for Quantum Information Seminar
102 Steele, 3 p.m.—Topic to be announced. Sean Hallgren, postdoctoral scholar in computer science, Caltech.

Recruiter from the 3M Company
Center for Student Services, 3:30 to 5 p.m.—A recruiter will talk about 3M and its opportunities for employment. This meeting is important to those who have signed up for interviews with the Career Center. Anyone interested in finding out more about the 3M Company is welcome.

Astronomy Colloquium
155 Arms, Robert Sharp Lecture Hall, 4 p.m.—“Puzzling Cosmic Rays at the Highest Energies,” Angela Olinto, assistant professor, department of astronomy and astrophysics, University of Chicago. Information: www.astro.caltech.edu/~jlc/colloquia.html.

Silvio Conte Research Center for Neuroscience Seminar
24 Beckman Labs, 4 p.m.—“How to Make a Mammalian Brain,” Professor Derek van der Kooy, department of anatomy and cell biology, University of Toronto.

Environmental Science and Engineering Seminar
142 Keck, 4 p.m.—“Mesoscale Variability in Ocean Biology,” Scott Doney, climate and global dynamics division, National Center for Atmospheric Research. Refreshments, Keck lobby, 3:40 p.m.

Thursday, October 25

Recruiters from R.W. Johnson Company (Johnson & Johnson)
Center for Student Services, 3rd floor, CDC conference room, 9 a.m.—Recruiters will talk about R. W. Johnson and its opportunities for employment. This meeting is important to those who have signed up for interviews with the Career Center. Anyone interested in finding out more about R.W. Johnson is welcome.

Chemical Engineering Seminar
106 Spalding Lab, Hartley Memorial Seminar Room, 4 p.m.—“A Hierarchical Approach to Protein Molecular Evolution,” Professor Michael W. Deem, chemical engineering, UCLA. Refreshments, 113 Spalding, 3:30 p.m. Information: www.cheme.caltech.edu/seminars/seminars.html.

Geology Club Seminar
151 Arms, Buwalda Room, 4 p.m.—“Subduction of Oceanic and Continental Crust, Ultrahigh-Pressure Metamorphism, and Tectonic Regurgitation,” Gary Ernst, professor of geological and environmental sciences, Stanford University. Refreshments, 3:45 p.m. Information: www.gps.caltech.edu/seminars/geoclub/.

Physics Research Conference
201 E. Bridge, 4 p.m.—“A Dynamical New Look at the Lambda Transition,” David Goodstein, professor of physics and applied physics, Frank J. Gilloon Distinguished Teaching and Service Professor, and vice provost, Caltech. Refreshments, 108 East Bridge, 3:45 p.m. Information: www.pma.caltech.edu/~physcoll/PhysColl.html.

Friday, October 26

Fluid Mechanics Seminar
101 Guggenheim Laboratory, Lees-Kubota Lecture Hall, 3 p.m.—Topic to be announced. Juan Lasheras, professor of fluid mechanics, UC San Diego. Information: www.galcit.caltech.edu/Seminars/Fluids/CurrentFluids/index.html.

Biochemistry Seminar
153 Noyes, Sturdivant Lecture Hall, 4 p.m.—“Design of Emergent Chemical Systems: Toward Understanding the Transition from Inanimate to Animate Chemistry,” Professor M. Reza Ghadiri, department of chemistry, the Skaggs Institute for Chemical Biology, Scripps Research Institute.

Computer Science 0.1 Seminar
Baxter Lecture Hall, 4 p.m.—“Learning from Hints,” Yaser Abu-Mostafa, professor of electrical engineering and computer science, Caltech. Information: www.cco.caltech.edu/~koonin/cs.html.

Inorganic-Organometallics Seminar
151 Crellin, 4 p.m.—“Two-Electron Mixed-Valence Complexes as Catalysts for Photochemical Hydrogen Production,” Alan Heyduk, postdoctoral scholar in chemistry, Caltech.

Kellogg Seminar
Lauritsen Library, 4 p.m.—“The Spin Structure of the Proton in the Resonance Region,” Renee Fatemi, graduate student in physics, University of Virginia.

LIGO Seminar
155 Arms, Robert Sharp Lecture Hall, 4 p.m.—“Latest Update on R-Modes as a Source of Gravitational Radiation,” Lee Lindblom, visiting associate in theoretical astrophysics, Caltech.

William Bennett Munro Memorial Seminar
25 Baxter, 4 p.m.—“Belief, Dream-Belief, and Skepticism,” Jonathan Sutton, assistant professor of philosophy, Southern Methodist University. Refreshments.

October 29–November 4, 2001

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Monday, October 29

Aeronautics Seminar
101 Guggenheim Laboratory, Lees-Kubota Lecture Hall, 1 p.m.—“Zero Gravity Laboratory Experiments,” Professor Joseph Prah1, professor and chair, department of mechanical and aerospace engineering, Case Western Reserve University. Information: www.galcit.caltech.edu/seminars.shtml.

Ulric B. and Evelyn L. Bray Seminar
25 Baxter, 4 p.m.—“Partition Dependence in Judgment Under Uncertainty,” Craig Fox, associate professor of management, Fuqua School of Business, Duke University. Refreshments.

Geology and Planetary Sciences Seminar
155 Arms, Robert Sharp Lecture Hall, 4 p.m.—Topic to be announced. Tim Brown, High Altitude Observatory, National Center for Atmospheric Research. Information: www.gps.caltech.edu.

Special Biochemistry/Biophysics Seminar
147 Noyes, Sturdivant Lecture Hall, 4 p.m.—“Chaperone-Mediated Protein Folding in the Eukaryotic Cytosol,” Judith Frydman, assistant professor, department of biological sciences, Stanford University.

Applied and Computational Mathematics Colloquium
101 Guggenheim Laboratory, Lees-Kubota Lecture Hall, 4:15 p.m.—“The Immersed Boundary Method for Fluid-Structure Interaction,” Charles S. Peskin, professor of mathematics, Courant Institute of Mathematical Sciences, New York University. Refreshments, 3:45 p.m.

Tuesday, October 30

Caltech Library System Presents: Full-Text Searches in Academic Universe
Sherman Fairchild Library, multimedia conference room, noon to 1:30 p.m.—Learn how to conduct effective searches in the Academic Universe full-text databases. Registration: <http://library.caltech.edu/learning/form.htm>.

Carnegie Observatories Colloquium Series
William T. Golden Auditorium, 813 Santa Barbara Street, 4 p.m.—“Quasar Structure and Atmospheres: Bringing Physical Meaning to Type-1 AGN Phenomenology,” Dr. Martin Elvis, Harvard-Smithsonian Center for Astrophysics. Refreshments, 3:30 p.m.

General Biology Seminar
119 Kerckhoff, 4 p.m.—“Resolution of Local cAMP Signals Using Novel, Real-Time Sensors,” Jeffrey Karpen, associate professor, department of physiology and biophysics, University of Colorado School of Medicine.

Wednesday, October 31

Institute for Quantum Information Seminar
102 Steele, 3 to 4:30 p.m.—Topic to be announced. Daniel Gottesman, visiting scholar, electrical engineering and computer sciences department, UC Berkeley.

Astronomy Colloquium
155 Arms, Robert Sharp Lecture Hall, 4 p.m.—“Gamma-Ray Bursts: Their Energetics and Environment,” Dr. Dale Frail, visitor in astronomy, Caltech. Information: <http://astro.caltech.edu/~jlc/colloquia.html>.

Environmental Science and Engineering Seminar
142 Keck, 4 p.m.—“Direct Estimation of Carbon Isotopic Discrimination of Terrestrial Photosynthesis Using a Novel Organic Biomarker-Aerosol-Based Technique,” Maureen Conte, department of marine chemistry and geochemistry, Woods Hole Oceanographic Institution. Refreshments, Keck lobby, 3:40 p.m. Information: www.es.e.caltech.edu/seminars.html.

Thursday, November 1

Geology Club Seminar
151 Arms, Buwalda Room, 4 p.m.—Topic to be announced. Gustaf Arrhenius, professor of oceanography, UC San Diego. Refreshments, 3:45 p.m. Information: www.gps.caltech.edu/seminars/geoclub/.

Physics Research Conference
201 E. Bridge, 4 p.m.—“Quantum Cryptography,” Daniel Gottesman, visiting scholar, electrical engineering and computer sciences department, UC Berkeley. Refreshments, 108 East Bridge, 3:45 p.m. Information: www.pma.caltech.edu/~physcoll/PhysColl.html.

Friday, November 2

Fluid Mechanics Seminar
101 Guggenheim Laboratory, Lees-Kubota Lecture Hall, 3 p.m.—“Analysis of Microscale Transport for BioMEMS,” Carl Meinhardt, associate professor of mechanical engineering, UC Santa Barbara. Information: www.galcit.caltech.edu/Seminars/Fluids/CurrentFluids/index.html.

Computer Science 0.1 Seminar
Baxter Lecture Hall, 4 p.m.—“The Difficulty of Proving Programs Correct,” K. Mani Chandy, Simon Ramo Professor and professor of computer science, Caltech. Information: www.cco.caltech.edu/~koonin/cs.html.

Inorganic-Electrochemistry Seminar
147 Noyes, Sturdivant Lecture Hall, 4 p.m.—“Optimization of Asymmetric Catalysts Using Achiral Ligands,” Patrick J. Walsh, assistant professor, department of chemistry, University of Pennsylvania.

LIGO Seminar
155 Arms, Robert Sharp Lecture Hall, 4 p.m.—“Mode Mismatch in LIGO,” Biplab Bhawal, LIGO laboratory, Caltech.

Computer Science 0.1 seminars return

Since the 1940s, dramatic progress has taken place in the field of computer science, bringing fundamental changes to the infrastructure of society. The effects of this mind-boggling transformation surround us every day as our lives become more and more dependent on computers—and those effects become even clearer when our computing capabilities are threatened, whether by computer viruses, hackers, or a potential “millennium bug.”

As with past series, this year’s Computer Science 0.1 seminars are geared toward a general scientific audience, with the goal of increasing understanding of the mathematical, physical, and engineering aspects of a monumental and increasingly complex field. Attendance by students and postdoctoral researchers is particularly encouraged. Lectures will variously discuss algorithms for difficult and high-dimensional problems; methods for designing large programs and networks so that they are manageable and robust; and physical constraints on information processing.

The series kicked off on Friday, October 5, with a talk by Erik Winfree, Caltech associate professor of computer science and computational and neural systems, on the universality of computation, followed on October 12 by Leonard Schulman, associate professor of computer science, who discussed “Tractability and Intractability in Computation.”

The speaker on Friday, October 19, will be Pietro Perona, professor of electrical engineering and director of Caltech’s Center for Neuromorphic Systems Engineering, discussing “Clustering and Dimensionality Reduction.” The following Friday, Yaser Abu-Mostafa, Caltech professor of electrical engineering and computer science, will speak on “Learning From Hints,” and on November 2, Mani Chandy, Ramo Professor and professor of computer science at Caltech, will explain “The Difficulty of Proving Programs Correct.”

The seminars take place on Fridays at 4 p.m. throughout the fall term, usually in Baxter Lecture Hall (exceptions will be announced). More information and a list of upcoming lectures can be found online at www.cco.caltech.edu/~koonin/cs.html. Abstracts for individual talks will be added as they become available.

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CampusEvents

Monday, October 22

Baby Furniture and Household Equipment Pool

234 S. Catalina, 10 a.m. to 1 p.m.—Loans of kitchen and household necessities and baby furniture are made to members of the Caltech community. Information: 584-9773.

Ballroom Dance Club

Winnett lounge, 7:30 to 9 p.m.—Lindy hop for beginners, the third of a four-week series taught by a professional instructor. \$6 a lesson for Caltech students, \$8 for others. No partner required. If you missed the first two classes but know the basic figure, come anyway. Refreshments and a half-hour practice period will follow the class. Information: 229-7508 or www.its.caltech.edu/~ballroom/index.html.

Ballroom Dance Mini Party

Winnett lounge, 9:30 to 11 p.m.—Open dancing; make requests or bring your own music. Refreshments provided, no partner needed. Information: 229-7508 or www.its.caltech.edu/~ballroom/index.html.

Tuesday, October 23

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: (323) 550-8075 or jmph-p@pacbell.net.

Caltech Folk-Dancing Club

179 N. Vinado Ave., Pasadena, 7:30 p.m. to midnight—Drop-ins are welcome. Donations accepted.

Telluride Film Festival

Baxter Lecture Hall, 7:30 to 10 p.m.—The Caltech Alpine Club and REI present a collection of Telluride Film Festival classics. Fee: \$10 in advance, \$12 at the door. \$5 for students. Information: 395-2863 or alpine@its.caltech.edu. Tickets: 395-4652, 1 (888) 2CALTECH, or events@caltech.edu. Individuals with a disability: 395-4688 (voice) or 395-3700 (TDD).

Women's Volleyball

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

Beginners' Hip-Hop Dance Class

Braun Gym multipurpose room, 9 to 10:30 p.m.—Hip-hop classes, professionally taught, sponsored by the Caltech Dance Troupe. Fees for students, \$10 per term; for nonstudents, \$20 per term. Attendees must have a valid gym or student ID. To register, e-mail troupe@caltech.edu.

Wednesday, October 24

Baby Furniture and Household Equipment Pool

234 S. Catalina, 10 a.m. to 1 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—Conversation and coffee for parents and caregivers, and playtime for children. Information: 744-9919 or cdd@its.caltech.edu.

Men's Soccer

at Claremont-Mudd-Scripps, 4 p.m.

Water Polo

vs. Whittier College, 4 p.m.

The Caltech Women's Center Open House

Caltech Women's Center, 4:30 to 6:30 p.m.—Visit the new offices, meet the staff, and learn about the center's new programs. Refreshments. RSVP: Jennifer Cichocki, 395-3221 or jcichock@studaff.caltech.edu.

Ballroom Dance Club

Winnett lounge, 7:30 to 9 p.m.—Cha-cha for beginners, the second of a four-week series taught by a volunteer instructor. If you missed the first class, come anyway. \$1 per lesson. No partner required. Refreshments and a half-hour practice period will follow each class. Information: 229-7508 or www.its.caltech.edu/~ballroom/index.html.

Thursday, October 25

Caltech Architectural Tour

Athenaeum, 11:00 a.m. to 12:45 p.m.—Meet in the entry hall of the Athenaeum. Led by members of the Caltech Architectural Tour Service. Reservations: Susan Lee, 395-6327 or suze@caltech.edu.

Amnesty International Monthly Meeting

Caltech Y lounge, 7:30 to 9 p.m.—The Caltech/Pasadena chapter of Amnesty International will discuss new and on-going activities, including responses to the current international terrorist crisis, updates on current actions, and participation in the annual Doo Dah Parade. Refreshments. Information: lkamp@lively.jpl.nasa.gov, (818) 354-4461, or www.its.caltech.edu/~aigp22/home.shtml.

Friday, October 26

Caltech Y Noon Concert

Red Door Café, noon—Concert on the patio outside the Red Door, featuring singer/songwriter Jeremy Toback.

Falun Gong: The Real Story

101 Kerckhoff, 7:30 to 9:30 p.m.—Through video documentaries and discussion, learn about what Falun Gong is and why it is persecuted in China. Information: www.its.caltech.edu/~falun.

Women's Volleyball

at Whittier College, 7:30 p.m.

Saturday, October 27

Cross-Country

SCIAC Championships, at Prado Park, Chino, 9 a.m.

Men's Soccer

vs. Occidental College, 11 a.m.

Ballet Classes

Braun Gym multipurpose room, 1 to 4:30 p.m.—Free ballet classes sponsored by the Caltech Dance Troupe. No special clothing or shoes are required for the beginners' class. Beginners meet from 1 to 2 p.m., the intermediate group from 2 to 3:30 p.m., and the advanced group from 3:30 to 4:30 p.m. Attendees must have a valid gym or student ID.

Inti-Illimani, Music of the Andes

Beckman Auditorium, 8 p.m.—Played on more than 30 wind, string, and percussion instruments, Inti-Illimani's compositions explore the indigenous cultures of Chile, Peru, Bolivia, Ecuador, and Argentina. Tickets and information: 395-4652, 1 (888) 2CALTECH, or events@caltech.edu. Individuals with a disability: 395-4688 (voice) or 395-3700 (TDD). Visit Public Events at www.events.caltech.edu.

Sunday, October 28

Fencing

Individual tournament, at UC Irvine, 8 a.m. to 5 p.m.



Comedian Mark Russell will offer his trademark political humor at Beckman Auditorium, Saturday, November 3.

Monday, October 29

Baby Furniture and Household Equipment Pool

234 S. Catalina, 10 a.m. to 1 p.m.—Loans of kitchen and household necessities and baby furniture are made to members of the Caltech community. Information: 584-9773.

Men's Soccer

at Chapman University, 7 p.m.

Ballroom Dance Club

Winnett lounge, 7:30 to 9 p.m.—Lindy hop for beginners, the last of a four-week series taught by a professional instructor. \$6 a lesson for Caltech students, \$8 for others. No partner required. Refreshments and a half-hour practice period will follow the class. Information: 229-7508 or www.its.caltech.edu/~ballroom/index.html.

Ballroom Dance Mini Party

Winnett lounge, 9:30 to 11 p.m.—Open dancing; make requests or bring your own music. Refreshments provided, no partner needed. Information: 229-7508 or www.its.caltech.edu/~ballroom/index.html.

Tuesday, October 30

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: (323) 550-8075 or jmph-p@pacbell.net.

Caltech Folk-Dancing Club

179 N. Vinado Ave., Pasadena, 7:30 p.m. to midnight—Drop-ins are welcome. Donations accepted.

Women's Volleyball

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

Beginners' Hip-Hop Dance Class

Braun Gym multipurpose room, 9 to 10:30 p.m.—Hip-hop classes, professionally taught, sponsored by the Caltech Dance Troupe. Fees for students, \$10 per term; for nonstudents, \$20 per term. Attendees must have a valid gym or student ID. To register, e-mail troupe@caltech.edu.

Wednesday, October 31

Baby Furniture and Household Equipment Pool

234 S. Catalina, 10 a.m. to 1 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—Conversation and coffee for parents and caregivers, and playtime for children. Come in costume for Halloween. Information: 744-9919 or cdd@its.caltech.edu.

Men's Soccer

vs. University of Redlands, 2:30 p.m.

Water Polo

at University of La Verne, 4 p.m.

Ballroom Dance Club

Winnett lounge, 7:30 to 9 p.m.—Cha-cha for beginners, the last of a four-week series taught by a volunteer instructor. \$1 per lesson. No partner required. Refreshments and a half-hour practice period will follow the class. Information: 229-7508 or www.its.caltech.edu/~ballroom/index.html.

Thursday, November 1

Women in Science Open Forum #1

Caltech Women's Center, Center for Student Services, 7 p.m.—Join fellow students, staff, faculty, and community members in discussions about issues related to women in science. In our first open forum, the topic will be "Treatment of Women at Caltech: Past and Present." Presented by the Women in Science Group and cosponsored by the Caltech Women's Center.

Women's Volleyball

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

Friday, November 2

Caltech Women's Club Welcoming Coffee

2167 East Crescent Drive, Altadena, 9 to 10:30 a.m.—All new and current members of the Caltech/JPL community, men as well as women, are invited to attend a coffee at a private residence. This is a chance to meet friendly people and learn about the Women's Club and its activities. Information: (818) 952-6214 or tema@caltech.edu.

Caltech Environmental Task Force

Chandler Dining Hall, noon to 1 p.m.—We're working to make Caltech a more environmentally responsible campus. Look for the CETF sign on an outside table between Chandler and the Red Door.

Water Polo

at Claremont-Mudd-Scripps, 4 p.m.

Saturday, November 3

Fencing

Caltech Tournament, 8 a.m. to 5 p.m.

Water Polo

vs. Occidental College, 11 a.m.

Ballet Classes

Braun Gym multipurpose room, 1 to 4:30 p.m.—Free ballet classes sponsored by the Caltech Dance Troupe. No special clothing or shoes are required for the beginners' class. Beginners meet from 1 to 2 p.m., the intermediate group from 2 to 3:30 p.m., and the advanced group from 3:30 to 4:30 p.m. All attendees must have a valid gym or student ID.

Theater Arts at Caltech Presents

Dabney Lounge, 3 p.m.—Tennessee Williams's *The Notebook of Trigorin*, an adaptation of Anton Chekhov's *The Sea Gull*. Tickets and information: 395-4652, 1 (888) 2CALTECH, or events@caltech.edu. Individuals with a disability: 395-4688 (voice) or 395-3700 (TDD). Visit Public Events at www.events.caltech.edu.

Mark Russell's Patriotic Comedy

Beckman Auditorium, 8 p.m.—Mark Russell's PBS comedy specials and his syndicated columns are enjoyed all over America, as are his CDs, tapes, and videos. Tickets and information: 395-4652, 1 (888) 2CALTECH, or events@caltech.edu. Individuals with a disability: 395-4688 (voice) or 395-3700 (TDD). Visit Public Events at www.events.caltech.edu.

Sunday, November 4

Theater Arts at Caltech Presents

Dabney Lounge, 3 p.m.—Tennessee Williams's *The Notebook of Trigorin*, an adaptation of Anton Chekhov's *The Sea Gull*. Tickets and information: 395-4652, 1 (888) 2CALTECH, or events@caltech.edu. Individuals with a disability: 395-4688 (voice) or 395-3700 (TDD). Visit Public Events at www.events.caltech.edu.

SIRTF dedication set

The Science Center for the Space Infrared Telescope Facility (SIRTF), NASA's newest window on the universe, will be formally dedicated on the evening of Monday, October 22, at 5:30.

The center will be responsible for all aspects of the science operation for the observatory. Among those attending the dedication will be Edward Weiler, associate administrator for Space Science for NASA, Caltech President David Baltimore, JPL Director Charles Elachi, and Thomas Soifer, Caltech professor of physics and Science Center director.

Once launched next year, SIRTF will be the fourth of the agency's "Great Observatories." It will join the space-based Hubble Space Telescope and the Chandra X-Ray Observatory as they peer into the deepest reaches of space.

SIRTF's job will be to comb the cosmos for thermal infrared wavelengths that elude ground-based observatories. Such infrared traces indicate the presence of brown dwarfs, super planets, and newly born planetary systems that may exist around other stars in the Milky Way.

The dedication will take place in the east plaza of the Keith Spalding Building, on the southeast corner of California Boulevard and Wilson Avenue. Refreshments and tours of the center will follow the dedication. The Caltech community is invited to this event. Members of the media may RSVP by calling (626) 397-7105.

Reclassifications, from page 1

an evaluation of all jobs, the assignment of positions to the new framework, and a detailed explanation of the process.

The first job family under conversion is information technology (IT), which includes about 300 staff in a number of divisions and departments across the Institute. HR is currently holding group meetings in each affected area to review the process, and managers are also meeting individually with affected IT staff members.

As positions are converted, starting with IT jobs, employees will note the following changes:

- Job postings will be grouped according to the new job family system, replacing the current A, E, O, S, and T structures.
- Since there will be a single, unified salary structure for all newly classified jobs, exempt/nonexempt designations will be assigned by job classification rather than by salary structure.
- Eligibility for “key staff” retirement contributions and vacation accrual will be determined by salary level (\$80,400 annually as of October 1, 2001), not by classification or title. (Note: Those participating in the key-staff retirement program at the time their classification is converted will continue to do so, regardless of salary level. Also, this change will not affect those promoted to or hired in the classifications of librarian, associate librarian, member of the professional staff, or member of the Beckman Institute.)

HR has also begun to convert the next job family, facilities, which includes positions in Physical Plant, Campus Auxiliary and Business Services, the Athenaeum, and a few other divisions and departments. The goal is to have all jobs converted by October 2003. The new classification structure will be available on the HR Web site as it is completed.

Questions about the reclassification process can be directed to Elizabeth Loftus (elizabeth.loftus@caltech.edu, ext. 8386) or Tom Schmitt (thomas.schmitt@caltech.edu, ext. 3230).

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CATS campus tour

The Caltech Architectural Tour Service, a service of the Caltech Women’s Club, has launched its 2001–02 program of tours of the Institute’s renowned architecture. The tours, which are free and open to the public, generally take place on the fourth Thursday of each month, begin in the front hall of the Athenaeum at 11 a.m., and last approximately 90 minutes.

Upcoming tours will take place on October 25, November 15, January 24, February 28, March 28, April 25, May 23, and June 27. Reservations are required, and special group tours can be arranged. Contact Susan Lee in Public Relations at (626) 395-6327 or suze@caltech.edu.

Hume, from page 1

The event is free and open to the public. No tickets are necessary; at least 500 seats will be available on a first-come, first-served basis. Doors open at 7:30 p.m. For more information, call (626) 395-4652 or toll free (888) 222-5832.

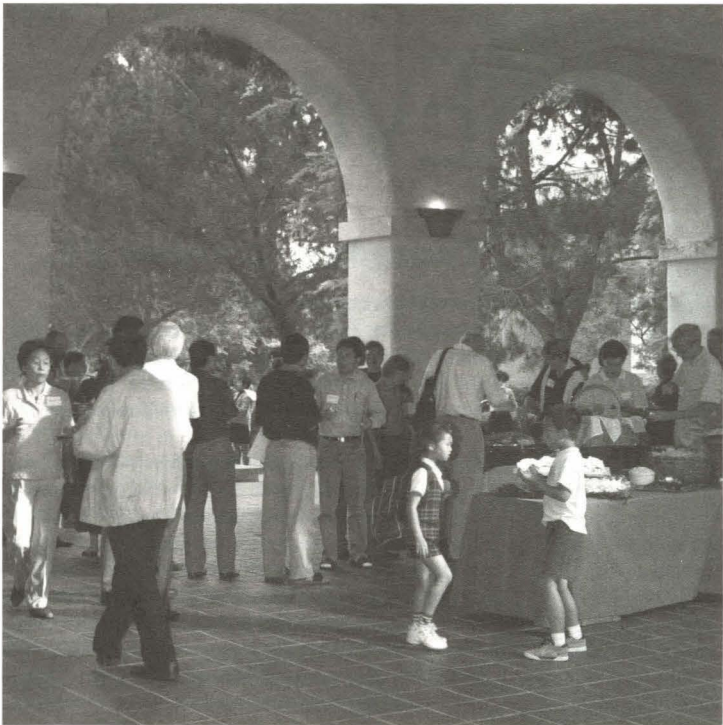
The DuBridge Distinguished Lecture series, inaugurated in 1996 in honor of former Caltech president Lee DuBridge (1946 to 1969), brings speakers of national and international importance to campus. DuBridge, who died in 1994, was once called America’s “senior statesman of science” by *Time* magazine, and was considered an exemplary research-university president in an era of vast scientific, societal, and educational change. He guided the growth of the modern Caltech, while maintaining an understanding of and interest in national affairs that was rare among university presidents. Previous DuBridge speakers include Walter Cronkite and Warren Buffett.

Parking clarification

The new parking registration requirement for Caltech visitors mentioned in the October 4 issue of 336 only applies during regular campus business hours, 7 a.m. to 5 p.m., Monday through Friday. Visitors who attend evening or weekend events on campus do not need to register.

Ideas wanted

Maybe your lab has just made a revolutionary discovery in the field of (fill in blank). Or your department has a big campus event or important information that you want to tell the Caltech community about. Or you know a quiet assistant cook who has written three best-selling mystery novels. Inquiring minds at *Caltech 336* want to hear your story ideas for possible publication. Send an e-mail to 336@caltech.edu, or call ext. 6240. (Sorry, we cannot guarantee that any particular story will be published.)



International Scholar Services held a welcoming reception on October 11 for researchers, staff, and faculty from around the world who are currently working at Caltech.

Genome, from page 1

which kicks off this year’s At the Crossroads Conference on November 9 and 10. The third annual conference is a collaborative effort between Caltech and Loyola Law School that aims to bridge the widening gap between modern law and science.

The mock trial is just one event in the two-day conference that examines the issues that fall at the intersection of law and technology. In many cases, technology is advancing so rapidly that laws and ethics designed to govern its use have yet to be articulated.

On Saturday, the conference features three panel discussions and debates. The confirmed participants include David Baltimore, Leroy Hood, and Dan Kevles, as well as law professors from Stanford, Michigan, Wisconsin, and Pennsylvania, and representatives from the National Institutes of Health and the U.S. Patent and Trademark Office. The panel moderators will be Erwin Chemerinsky from USC Law School, Andrew Pollack from *The New York Times*, and Manny Medrano from KNBC News.

The assembled law and science professionals will discuss three of the most germane issues regarding the ownership and exploitation of the human genome. The topics include genetic property (do I own my genes?), genetic privacy (are my genes safe from prying microscopes?), and genetic progress (in what new ways might my genes be used?). In addition, the Honorable Marilyn Hall Patel will deliver her ruling on *NuGenEra v. Dolly*.

Friday’s mock trial takes place in Caltech’s Ramo Auditorium beginning at 2 p.m. Saturday’s conference will be in Beckman Auditorium from 9 a.m. to 5 p.m. with registration at 8 a.m. Both events are free and open to the public, but advance registration is required and can be completed online at <http://techlaw.ils.edu>.

Building block, from page 1

Using the 10-meter Keck Telescopes at Mauna Kea, the team found a faint signal corresponding to a pair of feeble images later recognized in a deep Hubble Space Telescope picture. Spectroscopic studies made possible with the Kecks’ superior light-gathering power confirmed that the images arise through the magnification of a single source that appears very distant and in the process of formation.

“The system contains about a million or so stars at a distance of 13.4 billion light-years, assuming that the universe is 14 billion years old,” says Ellis. “While more distant galaxies and quasars have been detected with the Keck Telescopes, by virtue of the magnification afforded by the foreground cosmic lens, we are witnessing a source much smaller than a normal galaxy forming its first generation of stars.”

The team concludes that the star system is remarkably young by cosmic standards and thus may represent the birth of a “building block,” or subcomponent of a galaxy. Such systems are expected to have been abundant in the early universe and to have later assembled to form mature large galaxies like our own Milky Way.

“Our work is a little like studying early American history,” says team member Mike Santos, a Caltech graduate student in astronomy. “But instead of focusing on prominent individuals like George Washington, we want to know how everyday men and women lived.

“To really understand what was going on in the early universe, we need to learn about the typical, commonplace building blocks, which hold important clues to the later assembly of normal galaxies. Our study represents a beginning to that understanding.”

More information and images can be found online at www.astro.caltech.edu/~rse/firstlight/.

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