Caltech336

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The campus community biweekly

January 13, 2005, vol. 5, no. 1

Blast off!

Leslie M. Maxfield/Caltech Digital Media Center

Caltech and JPL blasted into the new year by sponsoring a float in the 2005 Tournament of Roses parade. Named "Family of Explorers," the float towered 50 feet above the ground and provided live, bird's-eye views of the parade route, thanks to a camera perched at the very top. Bedecked with planets, rockets, and satellites, the Caltech/JPL entry won the trophy for innovation in float design. Souvenir pins and float-related items are available for sale at the Caltech Bookstore and the JPL Store.

Caltech reaches a milestone

"There's only one. Caltech." That's what the Institute's capital campaign proclaims, and the message is apparently resonating with donors.

The campus community is invited to Beckman Auditorium on Tuesday, January 25, at 4 p.m. for a brief presentation by President David Baltimore, Campaign Chairman Wally Weisman, and others.

What new initiatives have been launched? How much has been raised for research and for financial aid? Which building projects are under way? What has yet to be funded? Don't miss out on this opportunity to learn about the campaign's progress. Early birds will receive giveaways, and refreshments will be served following the program.

Please contact Vannessa Dodson at ext. 4644 for additional information. To learn more about the campaign, visit www.one.caltech.edu.

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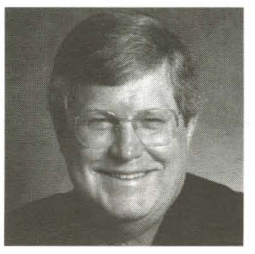

Vice president for B&F named

Caltech's search for a vice president for business and finance has ended with the appointment of Dean Currie, who will begin his new position in early February. He has served as vice president for finance and administration for the past 16 years at Rice University in Houston, Texas.

"It gives me great pleasure to announce the appointment of Dean W. Currie as Caltech's Vice President for Business and Finance," President David Baltimore wrote in a December 15 e-mail to the Caltech community. "Dean's qualifications and experience have prepared him well to assume leadership of Caltech's business and financial operations."

An alum of Harvard University, Currie also earned his MBA from that institution and served as the associate dean for

see Currie, page 6

The eyes don't lie

If your mother ever told you to watch out for strangers with shifty eyes, you can start taking her advice to heart. Neuroscientists exploring a region of the brain associated with the recognition of emotional expressions have concluded that it is the eye region that we scan when our brains process information about other people's emotions.

Reporting in the January 6 issue of *Nature*, Caltech professor of psychology and neuroscience Ralph Adolphs and colleagues at the University of Iowa, University of Montreal, and University of Glasgow describe new results they have obtained with a patient suffering from a rare genetic malady that destroyed her amygdala. Located in each side of the brain, the amygdala processes information about

see Eyes, page 6

Banker named new trustee

Investment banker Lewis van Amerongen has been appointed the newest member of the Caltech Board of Trustees.

Van Amerongen has spent close to 35 years in the management buyout and merchant banking business. A private investor since 1994, he was a general partner of Gibbons, Green, Goodwin, and van Amerongen from 1970 to 1994.

His private investments include Lost Creek Land & Cattle, an 18,000-acre agricultural and cattle ranch located about 20 miles from the international airport in Denver, Colorado, and Erickson Air-Crane Inc. Erickson owns the type certificate for, and is the manufacturer of, the S-64 helicopter. Erickson also operates the largest fleet of S-64's in the world, providing services for logging, aerial construction, and firefighting in North America, Europe, Korea, Malaysia, and Australia. Formerly the firm's chairman and CEO, van Amerongen is currently chairman emeritus.

see van Amerongen, page 6

Campus provides tsunami relief

In response to last month's Indian Ocean tsunamis that ravaged coastal towns from South Asia to Africa, Caltech students and staff members have come together to dig into their pockets for donations to assist the survivors.

Although the cataclysm that killed an estimated 150,000 people occurred on the far side of the world, the spirit of giving is alive and well here on campus, says Shankar Kalyanaraman, a graduate student in computer science and member of the Organization of Associated Students from the Indian Subcontinent (OASIS), which took the lead in organizing the Caltech Tsunami Relief Effort.

On January 5, the day the fund-raising effort began, donors gave a total of $1,000 at tables set up at the Red Door and Broad Cafés. At the end of two soggy days, the Caltech community had donated $1,860. In addition to the money, staff and students were also willing to donate something more valuable: their time.

"The volunteer response was really awesome this week," Kalyanaraman says. "We had 40 to 50 people volunteering at the tables, and I had to turn away some people because we didn't have any spots for them." Information and donation tables will be set up through January 14.

"Right now we're just concentrating on cash donations because we researched what the aid organizations needed and they said cash was best," he adds, noting that sending donations of materials and equipment to the region is not feasible at the moment.

"Our original idea was to focus on the rebuilding effort and on education

see Tsunami, page 6

Sieh blogs from Sumatra

Kerry Sieh, the Robert P. Sharp Professor of Geology, has studied the Sumatran subduction zone for more than a decade. Having recently returned to Indonesia, he is providing fascinating journal entries of his observations following the Aceh earthquake. His weblog may be found on the *Caltech Today* site at http://today.caltech.edu.

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NUMB3RS previewed on campus

The Caltech community got a chance to view a sneak preview of *NUMB3Rs*, the new CBS television series with a funny name, on January 10 in Beckman Auditorium.

Jokingly calling the series "Num-three-ers," President David Baltimore opened the preview with comments on some of the program's background. Although Caltech is not mentioned in the show, there are clues that point to a real relationship between the Institute and the televised crime drama. The evening's

see NUMB3RS*, page 6*

NewsBriefs

Caltech's Lindsay King '08 (right) faces off against Brooke Couper of Australia's Queensland Intensive Training Centre (QITC) in December. "It was a big deal for us," says coach Sandra Marbut of the Beavers' first-ever international game. "We thought it was a great opportunity for our kids." Part of Australia's national program, the QITC trains and develops Queensland's best basketball players and provides professional development for coaches.

Personals

Welcome to Caltech

November

Jack Aldrich, Caltech postdoctoral scholar in JPL's science and technology development section; **Lars Dietrich**, postdoctoral scholar in geobiology; **Michelle Gonzalez**, finance manager, Architectural and Engineering Services; **Christopher Jennings**, mechanic's aide, Central Utility Plant; **Katie Miller**, administrative assistant, applied physics; **Mario Molina**, dining-room service assistant, Athenaeum; **Heenam Park**, research technician, biology; **Clare Waterson**, science processing system developer, space astrophysics/GALEX; **John Zhong**, visitor in electrical engineering.

December

David Boyd, research scientist, mechanical engineering; **LaKeisha Bumper**, security officer, Security and Parking Services; **Shourov Chatterji**, postdoctoral scholar in physics; **David Espinoza**, bus person, Athenaeum; **John Fisk**, postdoctoral scholar in chemical engineering; **Virginie Goubert**, histology technician, biology; **Jessica Chi-Su-Gutierrez**, department assistant, Campus Life; visitors **Jing Liu**, in geology, and **Derek Macmillan**, in chemical engineering; **Jose Sanchez**, general helper/dishwasher, Dining Services; **Aaron Shoop**, assistant animal laboratory technician, biology; **Dmitry Shorokhov**, postdoctoral scholar in chemistry; **Isabel Simrak**, retail associate, Student Affairs–JPL Bookstore; **Krish Subramaniam**, programmer, biology; postdoctoral scholars **Kosuke Tani**, in chemistry, **James Taylor**, in astronomy, and **Tao Yi Wang** in economics; **Jason Wong**, senior Windows administrator, ITS Infrastructure; **Zisu Zhao**, postdoctoral scholar in the Center for Advanced Computing Research.

New positions

Susan Cross, PhD, has been appointed director of Caltech's Staff and Faculty Consultation Center (SFCC). A licensed psychologist with an in-depth understanding of organizational dynamics and mental-health issues, she has been a member of the SFCC staff since 1997. As director, Cross will oversee all office activities.

Amy Malak is joining the SFCC staff as a work/life specialist. She has worked at the Caltech Career Development Center for the last 12 years, and she will be developing services and programs that support the Caltech community.

Retirements

Jeffrey Jones, chief engineer at the Infrared Processing and Analysis Center (IPAC), retired on January 3, after 15 years at Caltech.

Carrie Khim retired on January 7. A member of the staff for procurement services, she had worked at Caltech for 14 years.

Gerald Landry retired on January 3 after 32 years at Caltech. He was a research engineer in aeronautics.

Charlene Liebau, special projects coordinator in Student Affairs, retired on January 3. She had worked at Caltech for 10 years, nine of them as director of admissions. During her tenure, the Institute experienced an increase of more than a third in the number of freshman applications, along with an increase in the number of women matriculating. She also initiated a partnership program with local public high schools, launched an admissions newsletter, expanded the active involvement of alumni in regional recruitment programs, and worked closely with campus committees to expand scholarship programs.

Deaths

Thomas Caughey, Hayman Professor of Mechanical Engineering, Emeritus, died on December 7; he was 77. He received his bachelor's degree from Glasgow University in 1948, his master's from Cornell in 1952, and his PhD from Caltech in 1954, the same year he became an assistant professor of applied mechanics at the Institute, where he had already been working as an instructor. He was appointed full professor in 1962 and professor of applied mechanics and mechanical engineering in 1988, and was named Hayman Professor in 1994. An international leader in the field of dynamics and vibrations, particularly in the responses of nonlinear systems and randomly excited systems, Caughey did important work with Caltech colleagues on fluid-induced forces in turbomachinery. In recent years he had become involved in the areas of structural monitoring and active control of large structures, such as buildings and bridges, when subjected to earthquakes or strong winds. According to Caltech provost and professor of civil engineer and applied mechanics Paul Jennings, in his December 27 e-mail to the campus, Caughey's work "was noted for its elegant style and mathematical rigor." His awards included the Freudenthal and Theodore von Kármán medals from the American Society of Civil Engineers and the Den Hartog Award of the American Society of Mechanical Engineers.

Ben Edelson, a graduate student in chemistry, died in early December. Noted as an outstanding chemist and a talented musician, he was considered a kind and thoughtful colleague. He came to Caltech in the fall of 2000 after graduating from Harvard, and had planned to begin postdoctoral work at UC Berkeley next year.

Cornelius Pings, a former Caltech professor and the Institute's vice provost and dean of graduate studies from 1971 to 1981, died on December 6; he was 75. He earned all of his degrees at Caltech, including his PhD in 1955, and he joined the faculty in 1959 as an associate professor of chemical engineering, becoming full professor in 1964. He also served as executive officer for chemical engineering from 1969 to 1973. In 1981 he joined USC, where he served as provost and senior vice president for academic affairs until 1993. That year he received USC's highest honor, the Presidential Medallion, and became president of the Association of American Universities, a position he held until 1998. He chaired several national committees dealing with issues ranging from the health of U.S. science and technology to controversies regarding the overhead costs of research. A member of, among others, the National Academy of Engineering, the American Academy of Arts and Sciences, the American Institute of Chemical Engineers, and the American Chemical Society, he received numerous honors, including the Distinguished Alumni Award, Caltech's highest honor. He was a member of the Caltech Associates and a presidential member of the USC Associates, and served in numerous capacities in corporate and community affairs. He is survived by Marjorie, his wife of more than 40 years, and by his children, John, Anne, and Mary.

Honors and awards

Richard Andersen, Boswell Professor of Neuroscience, has been selected by the McKnight Endowment Fund for Neuroscience to receive a 2005 Neuroscience of Brain Disorders Award. According to the fund, "Andersen's laboratory has made progress in developing a 'brain-machine interface' to help people with severe paralysis." The award of $300,000 over three years, beginning in February 2005, will help Andersen test this device—a "'cognitive cortical prosthetic' that would 'read' the intentions of people with severe paralysis, enabling them to direct their movements"— with human patients.

David Baltimore, president of Caltech and Nobel laureate, has been named by California state treasurer Phil Angelides to the Independent Citizens Oversight Committee, which will oversee the spending of $3 billion in state bond money approved by Proposition 71 for stem-cell research. The committee is made up of representatives of the five University of California campuses with medical schools, and of members appointed by the governor, lieutenant governor, treasurer, controller, senate president pro tempore, and speaker of the assembly.

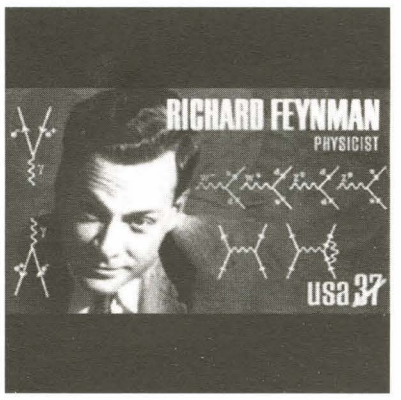
Kaushik Bhattacharya, professor of mechanics and materials science, has received two honors. Named the 2004 recipient of the Young Investigator Medal from the Society of Engineering Science "in recognition of his contributions to engineering science in the areas of thin films, active materials and continuum mechanics," he was awarded the medal during the society's annual meeting in October at the University of Nebraska, Lincoln. He was also presented with the 2004 Special Achievement Award for Young Investigators in Applied Mechanics by the Applied Mechanics Division of the American Society of Mechanical Engineers, this at the 2004 International Mechanical Engineering Congress and R&D Exposition in November, "in recognition of his seminal contributions in identifying the critical crystallographic features that govern shape memory behavior in solids and thin films."

Tom Hou, Powell Professor of Applied and Computational Mathematics and executive officer for applied and computational mathematics, is the first recipient of the Morningside Gold Medal in Applied Mathematics. Awarded to outstanding mathematicians of Chinese descent under the age of 45, the Morningside Medals are intended to encourage the pursuit of mathematical truth. Hou was honored at the Third International Congress of Chinese Mathematicians "for his seminal research on applied partial differential equations, scientific computation and numerical analysis."

Tapio Schneider, assistant professor of environmental science and engineering, has been honored with the first annual James R. Holton Award for Junior Atmospheric Scientists, receiving the prize on December 14 at the annual meeting of the American Geophysical Union. He was honored for "outstanding research contributions by a junior atmospheric scientist within three years of his PhD."

Kip Thorne, Feynman Professor of Theoretical Physics, has been chosen to receive the 2005 Common Wealth Award in Science on April 23 in Wilmington, Delaware. According to the award letter, the selection committee was impressed by Thorne's mentoring of younger colleagues as well as his reputation as an outstanding scientist. The award carries a cash prize of $50,000 and a trophy.

Kai Zinn, professor of biology, has been selected by the McKnight Endowment Fund for Neuroscience to receive a 2005 Neuroscience of Brain Disorders Award. The award will enable Zinn's research group to further evaluate Pumilio—an RNA-binding protein that represses protein translation—in yeast and fly systems. This work may have implications for studies of human brain function and dysfunction, since humans have a close relative of Pumilio that is expressed in the brain. The award will comprise $300,000 over three years, beginning in February 2005.



Feynman honored on stamp

Among the people who will appear on new postage stamps in 2005 will be the late Caltech professor Richard Feynman, one of four American scientists to be honored.

The Nobel Prize–winning physicist will appear in an April rollout of stamps that will also bear the likenesses of geneticist Barbara McClintock, mathematician John von Neumann, and thermodynamicist Josiah Willard Gibbs.

Each year, the U.S. Postal Service receives thousands of stamp suggestions, from which a few dozen stamps are issued each year. Says David Failor, executive director of stamp services, commemorative stamps portray individuals and subjects "that are instrumental to the American experience."

Feynman's appearance may be due in part to a 1995 petition and letter-writing campaign by his friend and collaborator Ralph Leighton that was supported by Caltech professor Kip Thorne and other faculty members. Leighton also attended a Citizens' Stamp Advisory Committee meeting in 1997 and stayed in contact with committee members. He says, "I'm not sure what exactly triggered approval for the scientist stamps—persistence, probably, and perhaps the fact that scientists have not been recognized on stamps for decades, while cartoon characters and movie actors have had plenty of commemoratives."

Caltech's Mail Services is working with the Postal Service on a first-day cover—a special commemorative envelope bearing the stamp that will receive a postmark on the day of issue. An official date of issue has not yet been set by the Postal Service, says Chris Henderson, director of Graphic Resources and Mail Services, but Caltech is planning to hold an event on the day after the national release.

Other people and topics to receive portrayals this year will be opera singer Marian Anderson, who will be part of the Black Heritage series; former president Ronald Reagan; the Muppets and their creator, Jim Henson; Mickey Mouse and other Disney pals; and the civil rights movement, in a set titled "To Form a More Perfect Union."

For more information, visit www.usps.com/communications/news/stamps/2004/sr04_076.htm.

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TIAA-CREF opens local office

Just a few blocks from Caltech is a new TIAA-CREF office, making it convenient for campus community members to get guidance regarding their retirement accounts and other financial products and services.

The office is located at 2 North Lake Avenue, Suite 130, and can be reached at (866) 842-2905 (toll free), (626) 432-6300, or (626) 304-1090 (fax). Employees who would like to receive individual counseling at the office may call to schedule a session. Please note that sessions are available by appointment only for the time being. TIAA-CREF will also continue to hold individual and group counseling sessions on campus.

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the academic week at Caltech is a printed version of selected events from the online master calendar, **http://today.caltech.edu/calendar**. To publish events online, register as an event planner on the Caltech Today calendar. If unable to submit electronically, please call (626) 395-3630. For further information or a schedule of deadlines, call **(626) 395-3630**, fax (626) 449-2159, write *336 Calendar*, 1-71, California Institute of Technology, Pasadena, CA 91125, or e-mail **debbieb@caltech.edu**.

January 17–30, 2005

M T W T F S S

Monday, January 17

Martin Luther King Day Holiday

Tuesday, January 18

Caltech Library System Presents: Life Sciences Information Resources
Sherman Fairchild Library, multimedia conference room, noon to 1:30 p.m.—Learn the various bibliographic databases to consider for retrieving interdisciplinary information related to the life sciences, as well as options for receiving automatic updates of new literature on your topic, use of subheadings in PubMed/Medline, and other database functions and features. Registration: http://oliphaunt.library.caltech.edu/forms/cls-classes.

Numerical Relativity Seminar
114 E. Bridge, 1:30 p.m.—Topic to be announced. Professor James Bardeen, department of physics, University of Washington.

Ulric B. and Evelyn L. Bray Seminar in Political Economy
25 Baxter, 4 p.m.—"The Effect of Newspaper Market Structure on Congressional Politics," Professor James Snyder, department of economics, MIT.

Chemical Physics Seminar
147 Noyes, Sturdivant Lecture Hall, 4 p.m.—"Testing E = mc^2 and Weighing Chemical Bonds," David Pritchard, Green Professor of Physics, MIT.

Caltech/MIT Enterprise Forum
Baxter Lecture Hall, 5:30 to 9 p.m.—"Entrepreneurship on Established ePlatforms: Venturing in a Connected World" will be the topic of a meeting led by Bill Gross, chairman of idealab! Speakers and panelists will contribute their vision of present and future opportunities arising from the electronic commerce arena of the ubiquitous, online, high-bandwidth world. Information: http://www.entforum.caltech.edu.

Wednesday, January 19

Mathematical Physics Seminar
351 Sloan, noon—"Dispersion of One-Dimensional Schrödinger Operator with Periodic One-Gap Potential," Kaihua Cai, graduate student in mathematics, Caltech. Information: www.math.caltech.edu/events/mathphys.html.

Environmental Science and Engineering Seminar
142 Keck, 3:40 to 5 p.m.—"Beyond the Mass-Dependent/Mass-Independent Dichotomy," Dr. Alon Angert, Berkeley Atmospheric Sciences Center, UC Berkeley.

Thursday, January 20

Caltech Library System Presents: Patents
Sherman Fairchild Library, multimedia conference room, 2 to 3:30 p.m.—A review of the patenting process, followed by a quick review of patent searching, locating English-language patent equivalents, legal status issues, and current awareness techniques. Registration: http://oliphaunt.library.caltech.edu/forms/cls-classes.

Geology Club Seminar
151 Arms, Buwalda Room, 4 p.m.—"Tectonic Evolution of the Cenozoic Kongur Shan Extensional System, Western China," Alex Robinson, graduate student, earth and space sciences department, UCLA.

Physics Research Conference
201 E. Bridge, 4 p.m.—"Quantum Computation and Anyons," Professor Alexei Kitaev, professor of theoretical physics and computer science, Caltech. Refreshments, 114 E. Bridge, 3:45 p.m.

Von Karman Lecture Series
JPL, von Karman Auditorium, 7 p.m.—"Oceans: Today's View from Space with Supercomputers," Ichiro Fukumori, principal scientist, JPL.

Friday, January 21

High Energy Theory Seminar
469 Lauritsen, 11 a.m.—"Supertubes, Black Rings, and Black Hole Entropy," Iosif Bena, UCLA. Information: www.theory.caltech.edu/people/seminar.

Organic Chemistry Seminar
153 Noyes, Sturdivant Lecture Hall, 2 p.m.—"Strained Silacycles: A Powerful Platform for Asymmetric and Tandem Reaction Design," Professor James L. Leighton, department of chemistry, Columbia University.

Fluid Mechanics Seminar
101 Guggenheim Lab, Lees-Kubota Lecture Hall, 3 p.m.—"Shapes and Dynamics of Flat Spiral Diffusion Flames in Karman Swirling Flows," Professor Forman Williams, mechanical and aerospace engineering, UC San Diego.

Inorganic-Organometallics Seminar
151 Crellin, 4 p.m.—Topic to be announced. Bruce MacKay, postdoctoral scholar in chemistry, Caltech.

Kellogg Seminar
Lauritsen Library, 4 p.m.—"JLAB Theory," Anthony Thomas, chief scientist and head of the theory group, Thomas Jefferson National Accelerator Facility.

Von Karman Lecture Series
Pasadena City College, 1570 E. Colorado, the Vosloh Forum (south of Colorado on Bonnie), 7 p.m.—"Oceans: Today's View from Space with Supercomputers," Ichiro Fukumori, principal scientist, JPL.

Monday, January 24

Biophysics Lecture Series
153 Noyes, Sturdivant Lecture Hall, 4 p.m.—"Chromosome Structure and Gene Regulation," Professor Jonathan Widom, department of biochemistry, molecular biology, and cell biology, Northwestern University.

Geological and Planetary Sciences Seminar
155 Arms, Robert Sharp Lecture Hall, 4 p.m.—"Biodegradation, the Origin of Heavy Oil, and the Deep Biosphere of Earth and Mars," Steve Larter, Canada Research Chair in Petroleum Geology, University of Calgary.

High Energy Physics Seminar
469 Lauritsen, 4 p.m.—"Precision Low-Energy Experiments in the LHC Era," Yury Kolomensky, assistant professor, department of physics, UC Berkeley.

Tuesday, January 25

General Biology Seminar
119 Kerckhoff, 4 p.m.—Topic to be announced. Professor Yigong Shi, department of molecular biology, Lewis Thomas Laboratory, Princeton University.

W. N. Lacey Lectureship in Chemical Engineering
106 Spalding Lab, Hartley Memorial Seminar Room, 4 p.m.—"Highly Nonlinear Polymer Dynamics," Professor Ronald G. Larson, department of chemical engineering, University of Michigan, Ann Arbor. Refreshments, 113 Spalding Lab, 3:30 p.m. Information: www.che.caltech.edu/calendar/seminars.html.

Wednesday, January 26

Environmental Science and Engineering Seminar
142 Keck, 3:40 to 5 p.m.—"Chemical Reactivity of Iron Oxide Nanoparticles," R. Lee Penn, assistant professor of chemistry, University of Minnesota, Twin Cities. Information: www.ese.caltech.edu/seminars/index.html.

Information Science and Technology Seminar
74 Jorgensen, 4 p.m.—Topic to be announced. Professor Sekhar Tatikonda, department of electrical engineering, Yale University.

Organic Chemistry Seminar
147 Noyes, Sturdivant Lecture Hall, 4 p.m.—"Small Molecule Replacements of Transcriptional Activation Domains," Professor Anna Mapp, department of chemistry, University of Michigan.

Earnest C. Watson Lecture Series
Beckman Auditorium, 8 p.m.—"The Shuttle Fleet, *Columbia*, and Present and Future Space Access," Paul Dimotakis, Northrop Professor of Aeronautics and professor of applied physics, Caltech. Admission is free. Information: 395-4652, 1 (888) 2CALTECH, or events@caltech.edu. Individuals with a disability: 395-4688 (voice) or 395-3700 (TDD). Visit Public Events at www.events.caltech.edu.

Thursday, January 27

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

Geology Club Seminar
151 Arms, Buwalda Room, 4 p.m.—Topic to be announced. Cody Nash, graduate student in geobiology, Caltech.

W. N. Lacey Lectureship in Chemical Engineering
106 Spalding Lab, Hartley Memorial Seminar Room, 4 p.m.—"DNA and Microfluidics," Professor Ronald G. Larson, department of chemical engineering, University of Michigan, Ann Arbor. Refreshments, 113 Spalding Lab, 3:30 p.m.

Physics Research Conference
201 E. Bridge, 4 p.m.—"Particle Physics Circa 2010," Savas Dimopoulos, professor of physics, Stanford University. Refreshments, 114 E. Bridge, 3:45 p.m.

Friday, January 28

High Energy Theory Seminar
469 Lauritsen, 11 a.m.—Topic to be announced. Professor Vatche Sahakian, department of physics, Harvey Mudd College.

Inorganic-Organometallics Seminar
151 Crellin, 4 p.m.—"Photoelectrochemical Investigation of TiO_2 Dye-Sensitized Solar Cells: Kinetics and Thermodynamics," Jordan Katz, graduate student in chemistry, Caltech.

Kellogg Seminar
Lauritsen Library, 4 p.m.—"The KATRIN Experiment," Professor Hamish Robertson, department of physics, University of Washington.

CampusEvents

Monday, January 17

Credit Union Closure
All branches of the Caltech Employees Federal Credit Union will be closed in observance of the birthday of Martin Luther King Jr.

Tuesday, January 18

***Chinatown* Screening**
Beckman Auditorium, 8 p.m.—A screening of *Chinatown*, directed by Roman Polanski (1974) and starring Faye Dunaway and Jack Nicholson, will be held as part of the Frank Capra Film Series. Information: http://events.caltech.edu/events/event-1587.html.

Wednesday, January 19

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

Beginning Ballet Classes
Braun Gym, multipurpose room, 8 p.m.—An eight-week series of ballet lessons taught by a Caltech dancer. Classes began on January 12.

Thursday, January 20

Health and Wellness Series: "Small Changes, Big Results"
Caltech Women's Center, noon—Learn from Lori Paulus, founder of Stay Motivated!, how making small changes in your diet can make big differences in your health. Registration (required): 395-3221 or wcenter@studaff.caltech.edu.

Women's Basketball
at Pomona-Pitzer College, 7:30 p.m.

Beginning/Intermediate Jazz Classes
Braun Gym, multipurpose room, 9 p.m.—Learn jazz dance from Colette in this eight-week series of classes.

Friday, January 21

Fire-Extinguisher Training
Roof of Wilson Avenue North Parking Structure, 10 a.m.—This class will teach basic fire safety and include hands-on training on how to use a fire extinguisher. Class size is limited; please call 395-6727 or e-mail safety.training@caltech.edu to reserve a place.

Swimming and Diving
vs. University of La Verne, 4 p.m.

Women's Club Welcoming Coffee
Athenaeum Rathskeller, 5:30 to 7 p.m.—An opportunity to meet new friends, welcome newcomers, and learn more about the Caltech Women's Club.

Caltech Folk Music Society Presents John McCutcheon
Ramo Auditorium, 8 p.m.— John McCutcheon has emerged as one of the most respected and loved folksingers. Opening the concert will be a special performance by the Chapin Sisters. Tickets and information: http://events.caltech.edu/events/event-1824.html.

Winter Chamber Music Series
Dabney Lounge, 8 p.m.—Caltech students will perform a variety of music for small ensembles, with an emphasis on music of the 17th and 18th centuries. Each program in this concert series is different, with separate performers and repertoire. A reception will follow the concert. Admission is free and no tickets are required.

Saturday, January 22

Swimming and Diving
vs. University of Redlands, 11 a.m.

Belly Dance Class
Braun Gym, multipurpose room, 12:45 p.m.—Learn to belly dance with Leela, a popular performer and instructor. Fee for trial class: $5 for Caltech students, $8 for others. Fee for full 8-week series: $20 for Caltech students, $50 for others.

Women's Basketball
at Whittier College, 5 p.m.

Caltech Jazz Bands, Featuring Drummer Gregg Bissonette
Beckman Auditorium, 8 p.m.—This free concert will feature Gregg Bissonette playing with the Caltech Jazz Bands, directed by William Bing. Gregg has played drums with Carlos Santana, Ringo Starr, Maynard Ferguson, and many others.

Sunday, January 23

Winter Chamber Music Series
Dabney Lounge, 3:30 p.m.—Caltech students will perform a variety of music for small ensembles, with an emphasis on music of the 17th and 18th centuries. Each program in this concert series is different, with separate performers and repertoire. A reception will follow the concert. Admission is free and no tickets are required.

Monday, January 24

Standard First-Aid/CPR/AED
Brown Gym classroom, 7:30 a.m. to 5 p.m.—Standard first-aid, cardiopulmonary resuscitation (CPR), and automatic external defibrillator (AED) training will be offered by Caltech's Safety Office in conjunction with the American Red Cross. Fee: $25 for materials. Registration: 395-6727 or safety.training@caltech.edu.

Tuesday, January 25

Fund-Raising Milestone
Beckman Auditorium, 4 p.m.—All members of the Caltech community are invited to hear a brief announcement regarding Caltech's $1.4 billion fund-raising campaign. Prizes for early arrivers. Refreshments to follow the program. Sponsored by Development and Alumni Relations.

Adult, Child, and Infant First-Aid and CPR Training
Brown Gym classroom, 7:30 a.m. to noon—Adult, child, and infant first-aid and CPR training will be offered by Caltech's Safety Office in conjunction with the American Red Cross. This is a two-day class; to receive certification, you must attend today and on Thursday, January 27. Fee: $30 for materials. Registration: 395-6727 or safety.training@caltech.edu.

Wednesday, January 26

CPR/AED Recertification
Brown Gym classroom, 7:30 a.m. to noon—CPR recertification training will be offered by Caltech's Safety Office in conjunction with the American Red Cross. There is a small fee for materials. Information and registration: 395-6727 or safety.training@caltech.edu.

Beginning Ballet Classes
Braun Gym, multipurpose room, 8 p.m.—An eight-week series of ballet lessons taught by a Caltech dancer. Classes began on January 12.

Thursday, January 27

Career Day
Brown Gymnasium, 10:30 a.m. to 2:30 p.m.—This informal event provides undergraduates, grad students, and postdocs an opportunity to gather information about companies, speak with company representatives, and drop off résumés. This event is open to the entire Caltech community. Freshmen and sophomores are encouraged to attend.

Caltech Architectural Tour
Athenaeum, 11 a.m. to 12:30 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 p.m.—Caltech/Pasadena AI Group 22 holds its monthly meeting to discuss current activities and plans. All are welcome. Refreshments. Information: (818) 354-4461 or lkamp@lively.jpl.nasa.gov. Visit our website at www.its.caltech.edu/~aigp22.

Voices of Vision: Jorge Mester, Pasadena Symphony Conductor
Ramo Auditorium, 8 p.m.—Jorge Mester, conductor of the Pasadena Symphony, will discuss the history and mystery of conducting in a talk entitled "Unveiling the Mysteries of Conducting: Who is Looking?" Admission is free.

Beginning/Intermediate Jazz Classes
Braun Gym, multipurpose room, 9 p.m.—Learn jazz dance from Colette in this eight-week series. Lessons began on January 20.

Friday, January 28

Winter Chamber Music Series
Dabney Lounge, 8 p.m.—Caltech students will perform piano duets and a variety of music for small ensembles. Each program in this concert series is different, with separate performers and repertoire. A reception will follow the concert. Admission is free and no tickets are required.

Wu Man, Pipa Virtuoso
Beckman Auditorium, 8 p.m.—Wu Man is an internationally renowned virtuoso on the pipa, a lute-like instrument with a history of more than two thousand years in China. 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.

Saturday, January 29

Baseball
vs. Dodgertown West, doubleheader, at Pasadena High School, 11 a.m.

Belly Dance Class
Braun Gym, multipurpose room, 12:45 p.m.—Learn to belly dance with Leela, a popular performer and instructor. Fee for trial class: $5 for Caltech students, $8 for others. Fee for full 8-week series: $20 for Caltech students, $50 for others.

Lazer Vaudeville
Beckman Auditorium, 2 p.m.—Brilliant laser beams cast a spell of visual wonder, spotlighting juggling, acrobatics, magic tricks, and black-light rope spinning. Featuring Alfonso, the colorful dragon emcee, this is a performance for the entire family, from 6 years and up. 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.

Winter Chamber Music Series
Dabney Lounge, 8 p.m.—Caltech students will perform piano duets and music for small string and woodwind ensembles. Each program in the winter chamber music series is different, with separate performers and repertoire. A reception will follow the concert. Admission is free and no tickets are required.

Sunday, January 30

Coleman Chamber Concert
Beckman Auditorium, 3:30 p.m.—Les Violons du Roy, with soprano Karina Gauvin, will perform music by Handel and Bach. 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.

Ongoing events

Tuesdays

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: 584-0970 or kimdeman@yahoo.com.

CIT Knitters Group Meeting
256 Mudd Laboratory, South, noon—All levels of knitters and related handcrafters are welcome. We make items for others and ourselves. Information: 395-6905.

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

Wednesdays

Wednesdays in the Park
Tournament Park, 10 a.m. to noon—Every Wednesday there's conversation and coffee for parents and caregivers, and playtime and snacks for children. Stop by and make new friends from around the world. Information: 793-2535 or nancyhewett@earthlink.net.

Thursdays

Baby Furniture and Household Equipment
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 and JPL communities. Open on Thursdays only. No appointment is necessary. Information: 584-9773 or furnpool@caltech.edu.

Fridays

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

Week of events to honor King legacy

A weeklong campus celebration honoring Martin Luther King Jr. and his efforts toward building a unified society will take place from Tuesday, January 18, to Saturday, January 22. All events are free and open to the Caltech community.

Throughout the day on Tuesday, January 18, the civil rights leader's world-famous "I Have a Dream" speech will play in the Center for Student Services lobby and at various other locations. A poster display will feature the text of the nine-minute speech, given at the Lincoln Memorial in 1963.

On Wednesday, a keynote luncheon with Stanford University historian Clayborne Carson will take place at noon in Dabney Lounge. Director of the MLK Papers Project, Carson will discuss King's vision for civil rights and how society stands up to that vision today. Lunch will be provided, but space is limited; an RSVP is required to wcenter@studaff.caltech.edu.

Enjoy your lunch on the Red Door patio on Thursday at noon while listening to "Common Struggles: Dr. King on Civil Rights, Peace, and Justice," an audio presentation of King's speeches exploring the connection between the fights for civil rights at home and for global peace and justice. A poster display will also be featured.

Friday will see the kickoff of a video series to be shown each Friday throughout Black History Month. The first video is *Eyes On The Prize*. Called the most comprehensive television documentary on the American civil rights movement, it is a moving look at the pain, sacrifices, and triumphs of the grassroots struggle for racial equality. A discussion will follow the viewing. The event will take place from noon to 1:30 p.m. at the Center for Student Services, second floor. Lunch will be provided, but because of limited space, an RSVP is requested to isp@caltech.edu.

Wrapping up the week will be a service project on Saturday, January 22, part of a nationwide effort to translate King's teachings into a tangible form to make a difference in communities. Participants will help Rebuilding Together renovate a local home and the Foothill Boys and Girls Club. Transportation, meals, and T-shirts will be provided; signup is required at the Caltech Y or caltechy@caltech.edu.

The week's events are sponsored by the Cultural Programming Group—representatives from Admissions, Health Education, Human Resources, International Student Programs, Minority Student Education, the Women's Center, and the Caltech Y—together with Peaceful Justice at Caltech, the Caltech National Society of Black Engineers, and the Caltech Latino Association of Student Engineers and Scientists. Financial support comes from the President's Diversity Initiative Fund, Student Affairs, the Diversity Program Fund, and the James Irvine Foundation. Visit www.cpg.caltech.edu for more information.

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German film: *The Inheritors*, squared

The German-language film series will start off the new year with a dash of double vision: two acclaimed films from Austria whose titles translate as *The Inheritors*.

The first *Inheritors* (1984, Walter Bannert), to screen on Friday, January 14, is a compelling study of neofascism in contemporary Austria. Winner of numerous festival prizes, the movie—which follows 16-year-old Thomas's gradual immersion into a neo-Nazi youth organization—was described as "extraordinary, strong and perceptive" by the *New York Post*.

On February 18, Stefan Ruzowitzky's 1998 film of the same name will be presented. In this *Inheritors*, seven peasants inherit their cruel boss's farm when he is murdered, and they must soon fight to keep their property from townspeople who try to take control.

All films in the series have English subtitles and will screen on Friday evenings at 7:30 p.m. in Baxter Lecture Hall, followed by a reception in the Baxter lounge. For more information, e-mail aebi@hss.caltech.edu.

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Columbia disaster aftermath probed

As the one-year anniversary of the *Columbia* space shuttle tragedy nears, Paul Dimotakis, Caltech's Northrop Professor of Aeronautics and professor of applied physics, will discuss the accident and its effect on future space exploration. Part of the Watson Lecture Series, his talk, "The Shuttle Fleet, *Columbia*, and Present and Future Space Access" will take place Wednesday, January 26, at 8 p.m. in Beckman Auditorium.

Reliable and cost-effective space access is vital not only for military, communications, and scientific purposes, but also because it fulfills humanity's wanderlust and need for exploration. Developed more than three decades ago, the shuttle contributed new dimensions to space access. Since then, however, not one but two shuttle disasters have tragically underscored the fragility of our technologies. Dimotakis will discuss *Columbia*'s fateful final mission, Caltech's involvement in the follow-up investigation, and current and future alternatives for entering space.

Seating for this free public event is first-come, first-served, beginning at 7:30 p.m. For more information, contact Public Events at 1 (888) 2CALTECH, (626) 395-4652, or events@caltech.edu, or visit www.events.caltech.edu. Individuals with a disability can call 395-4688 (voice) or 395-3700 (TDD). All lectures will be available online at Caltech's Streaming Theater, http://today.caltech.edu/theater.

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NASA/JPL/Space Science Institute

A mosaic of nine processed images recently acquired during Cassini's first very close flyby of Saturn's moon, Titan, on October 26. The view is centered on 15 degrees South latitude, and 156 degrees West longitude. Brightness variations across the surface and bright clouds near the south pole are visible.

Stormy weather on Saturn's moon

Titan, it turns out, may be a very stormy place. In 2001, a group of astronomers led by Henry Roe, now a postdoctoral scholar at Caltech, discovered methane clouds near the south pole of Saturn's largest moon, resolving a debate about whether such clouds exist amid the haze of Titan's atmosphere.

Now Roe and his colleagues have found similar atmospheric disturbances at Titan's temperate midlatitudes, about halfway between the equator and the poles. In a bit of ironic timing, the team made its discovery using two ground-based observatories, the Gemini North and Keck 2 telescopes on Mauna Kea, in Hawaii, in the months before the Cassini spacecraft arrived at Saturn and Titan. The work appeared in the January 1 issue of the *Astrophysical Journal*.

"We were fortunate to catch these new midlatitude clouds when they first appeared in late 2003 and early 2004," says Roe, who is an O. K. Earl Postdoctoral Scholar at Caltech. Much of the credit goes to the resolution and sensitivity of the two ground-based telescopes and their use of adaptive optics, in which a flexible mirror rapidly compensates for the distortions caused by turbulence in Earth's atmosphere. These distortions are what cause the well-known twinkling of stars. Using adaptive optics, details as small as 300 kilometers across can be distinguished despite the distance to Titan (1.3 billion kilometers).

Still to be determined, though, is the cause of the clouds. According to Chad Trujillo, a former Caltech postdoctoral scholar and now a scientist at the Gemini Observatory, Titan's weather patterns can be stable for many months, with only occasional bursts of unusual activity like those recently discovered atmospheric features.

Like Earth, Titan has an atmosphere that is mostly nitrogen. Unlike Earth, Titan is inhospitable to life due to the lack of atmospheric oxygen and to its extremely cold surface temperatures, as cold as -297 degrees Fahrenheit. Along with nitrogen, Titan's atmosphere also contains a significant amount of methane, which may be the cause of the midlatitude clouds.

Conditions on Earth allow water to exist in liquid, solid, or vapor states, depending on localized temperatures and pressures. The phase changes of water between these states are an important factor in the formation of weather in our atmosphere. But on Titan, methane rules. The moon's atmosphere is so cold that any water is frozen solid, but methane can move between liquid, solid, and gaseous states. This leads to a methane meteorological cycle on Titan that is similar to the water-based weather cycle on Earth.

While the previously discovered south polar clouds are thought to be a result of solar surface heating, the new midlatitude clouds cannot be formed by the same mechanism. One possible explanation for the new clouds is a seasonal shift in the global winds. More likely, says Roe, surface activity might be disturbing the atmosphere at the midlatitude location. Geysers of methane slush may be brewing up from below, or a warm spot on Titan's surface may be heating the atmosphere. Cryovolcanism is another mechanism that could cause disturbances. Hints about what is happening on this frigid world could be obtained as the Huygens probe, which was released from Cassini in late December, drops through Titan's atmosphere this month.

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Films celebrate the spirit of Capra

The Frank Capra Film Series continues this term at the director's alma mater with presentations of three films. Although directed by others, these movies were created in the spirit of inserting social consciousness into works of popular entertainment. A panel of scholars and artists will discuss each film after its screening.

The first, *Chinatown* (1974), directed by Roman Polanski, stars Jack Nicholson as private detective Jake Gittes, whose investigation of a murder embroils him in a larger scam involving land, water, and a beautiful woman. This screening takes place on January 18 and will be followed by a panel discussion featuring Robert Rosenstone, professor of history at Caltech, and Bill Deverell, a professor of history at USC.

My Darling Clementine (1946), will be shown on February 1. Directed by John Ford, this Western features two legendary gunslingers: Wyatt Earp, played by Henry Fonda, and his tubercular friend John "Doc" Holliday, played by Victor Mature. Returning from a trip into the town of Tombstone, Earp finds that his brother has been killed and his ranch sacked by a clan of rowdies. Earp takes on the job of marshal, and he and his deputies seek to bring order to the lawless region.

On February 15, the futuristic *Soylent Green* (1973) takes audiences in an altogether different direction. Set in the year 2022 in a bleak and battered Manhattan, Charlton Heston plays Detective Robert Thorn. Pollution and overpopulation have overwhelmed the globe, and clean food and water are scarce. A murder investigation eventually leads Thorn to the grim truth: society has turned to an unconventional resource in order to survive.

The movies will screen at 8 p.m. in Beckman Auditorium. No tickets or reservations are required. For further information, visit the Caltech Public Events website at www.events.caltech.edu, or call 395-4652.

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Grad student Shankar Kalyanaraman distributes information at a table set up in Chandler Dining Hall. The fund-raising effort for tsunami victims raised nearly $2,000 in three days.

Tsunami, from page 1

programs for the children that have been affected," he says. The aid organizations chosen to receive donations include Asha for Education, an all-volunteer agency that promotes basic education in India, and the United Nations Children's Fund (UNICEF). A third, Architecture for Humanity, is a nonprofit organization of architects.

"They are looking at building medical clinics and schools," Kalyanaraman explains. "They have done work in Kosovo and in Bam, Iran, after the earthquake there." Additional groups that people can direct money to, he says, include AID India, Save the Children, Direct Relief, Sarvodaya (a Sri Lankan group), the Indonesian Red Cross, and the Berkeley-based Seva Foundation.

Assisting OASIS with the relief effort are Building Bridges, the Caltech Christian Fellowship, the Caltech Democratic Club, the Caltech Y, Graphic Resources and Mail Services, Health Education, and International Student Programs. Working with Student Affairs, the coalition was given the green light to hold a fund-raiser in Beckman Auditorium on January 23 that will feature dance groups from India.

In an e-mail to the campus, President David Baltimore lauded the relief coalition and encouraged community members to donate. In addition, he wrote, Caltech is recognizing OASIS for its lead role in the effort by giving $20,000 to the American Red Cross relief fund.

As a further incentive to donors, Congress recently signed a law giving taxpayers until January 31 to donate to tsunami relief and claim a deduction for the 2004 tax year.

The Caltech Tsunami Relief Effort's online site contains links to information about the disaster at www.caltechy.org/tsunami/index.html.

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van Amerongen, from page 1

Both an all-American soccer player and all-Ivy lacrosse player at Princeton University, where he earned his BSE degree, van Amerongen also holds an MBA from the Graduate School of Business at Stanford University.

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Currie, from page 1

administration and policy planning at its Graduate School of Business Administration. Since he joined Rice in 1988, his accomplishments have included converting the university to new software for finance, payroll, human resources, and student data; implementing a cogeneration system that provides 80 percent of campus electrical, heating, and cooling needs; restructuring the management of building and renovation projects; instituting a planning process for the university's finances and facilities; and orchestrating the school's first bond offering, which attained a AAA rating.

Currie serves on the boards of the National Association of College and University Business Officers; the Council on Governmental Relations; Tuition Plan, Inc.; and the China International Trade Associates, and is a past board member of the YMCA of the Rockies, TIAA-CREF Advisory Council, Joslin Diabetes Center, and Visiting Committee for Harvard College.

In his announcement, Baltimore also expressed thanks to Provost Paul Jennings and the search committee, "who worked diligently at the difficult and complex task of identifying the very best candidate from an extensive list of highly qualified individuals," and to Art Elbert, who has served as acting vice president since September. "We owe Art a tremendous debt of gratitude for his willingness to take on these additional duties and for his agreeing to continue in this capacity until Dean assumes office next February," Baltimore said.

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NUMB3RS, from page 1

emcee, Kevin Frazier of *Entertainment Tonight*, then introduced the pilot episode.

In it, actor Rob Morrow portrays FBI special agent Don Eppes, whose younger brother, Charlie (David Krumholtz), is a mathematical genius professor at a college much like Caltech. In a plotline based on a real-life case, Charlie uses a mathematical formula to help Don locate a rapist-turned-killer by pinpointing where the criminal would most likely be found.

Portions of the show were taped on campus (scenes that elicited cheers from the large and enthusiastic audience), and Professor of Mathematics Gary Lorden served as math consultant to the show. Lorden was also a member of the panel that discussed the series after the screening, along with Morrow and Krumholtz; actor Judd Hirsch, who plays the brothers' father; and the show's creators and producers, Pasadenans Cheryl Heuton and Nick Falacci.

The series will have its West Coast premiere on Sunday, January 23, at 10 p.m., and will air at the same time on subsequent Fridays.

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Eyes, from page 1

facial emotions. The patient shows an intriguing inability to recognize from facial expressions fear and other emotions.

"The fact that the amygdala is involved in fear recognition has been borne out by a large number of studies," explains Adolphs. "But until now the mechanisms through which amygdala damage compromises fear recognition have not been identified."

Although Adolphs and his colleagues have known for years that the woman is unable to recognize fear from facial expressions in others, they didn't know until recently that her problem was an inability to focus on the eye region of others when judging their emotions.

In normal test subjects, a person's eyes dart from area to area of a face in a quick, largely unconscious program of evaluating facial expressions to recognize emotions. The woman, by contrast, tended to stare at the photographs, displaying no tendency to regard the eyes at all. As a result, she was nonjudgmental in her interpersonal dealings, often trusting even those individuals who didn't deserve the benefit of the doubt.

However, the good news is that the woman could be trained to look at the eyes in the photographs. When she deliberately looked at the eyes upon being instructed to do so, she had a normal ability to recognize fear in the faces.

According to Adolphs, the study is a step forward in better understanding the human brain's perceptual mechanisms, and also is a key in possible therapies to help certain patients with defective emotional perception lead more normal lives.

In terms of the former, Adolphs says that the amygdala's role in fear recognition will probably be better understood with additional research such as that now going on in Caltech's new magnetic resonance imaging lab. "It would be naïve to ascribe these findings to one single brain structure," he says. "Many parts of the brain work together, so a more accurate picture will probably relate cognitive abilities to a network of brain structures."

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Caltech 101
Age of the earth and the perils of lead

How old is the earth? No one knew for sure until 1953, when Caltech geochemist Clair Patterson said "4.55 billion years"—something he learned from analyzing the decay rate of lead isotopes in meteorites and in the earth's oldest rocks. He later studied lead pollution in the oceans and atmosphere; using careful lab and sampling techniques, he proved that environmental lead was increasing, and that modern humans' bodies contain 1,000 times as much lead as did prehistoric humans'.

Due largely to his research and advocacy, pollution controls were eventually established in the U.S. auto industry, and leaded gasoline and paint were phased out. In recognition of this work, Patterson received the Tyler World Prize for Environmental Achievement in 1995, just months before he died. His determined, often lonely crusade against lead pollution inspired the character Sam Beech in Saul Bellow's novel *The Dean's December.*

Adapted from "Caltech 101," a series that ran in the Pasadena Star-News. *For more tidbits on Caltech's history, culture, current research, and more, visit http://today.caltech.edu and click on Caltech 101 at the lower right.*

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Timber!

Driving weekend rains toppled a tall pine in the yard of the president's home. The tree fell across the north student houses parking lot, but fortunately no cars—or people—were directly beneath. When all was cleared away, Marks House was amazingly all but unscathed, according to Bill Irwin, director of facilities management.

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

The campus community biweekly
January 13, 2005, vol. 5, no. 1

Editor: Daryn Kobata
(626) 395-6240; daryn@caltech.edu
Assistant Editor: Javier Marquez
(626) 395-6624; jmarquez@caltech.edu
Calendar Administrator: Debbie Bradbury
(626) 395-3630; debbieb@caltech.edu
Graphic Artist: Doug Cummings
Photographer: Bob Paz
Published by the Office of Public Relations

California Institute of Technology
Pasadena, California 91125

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