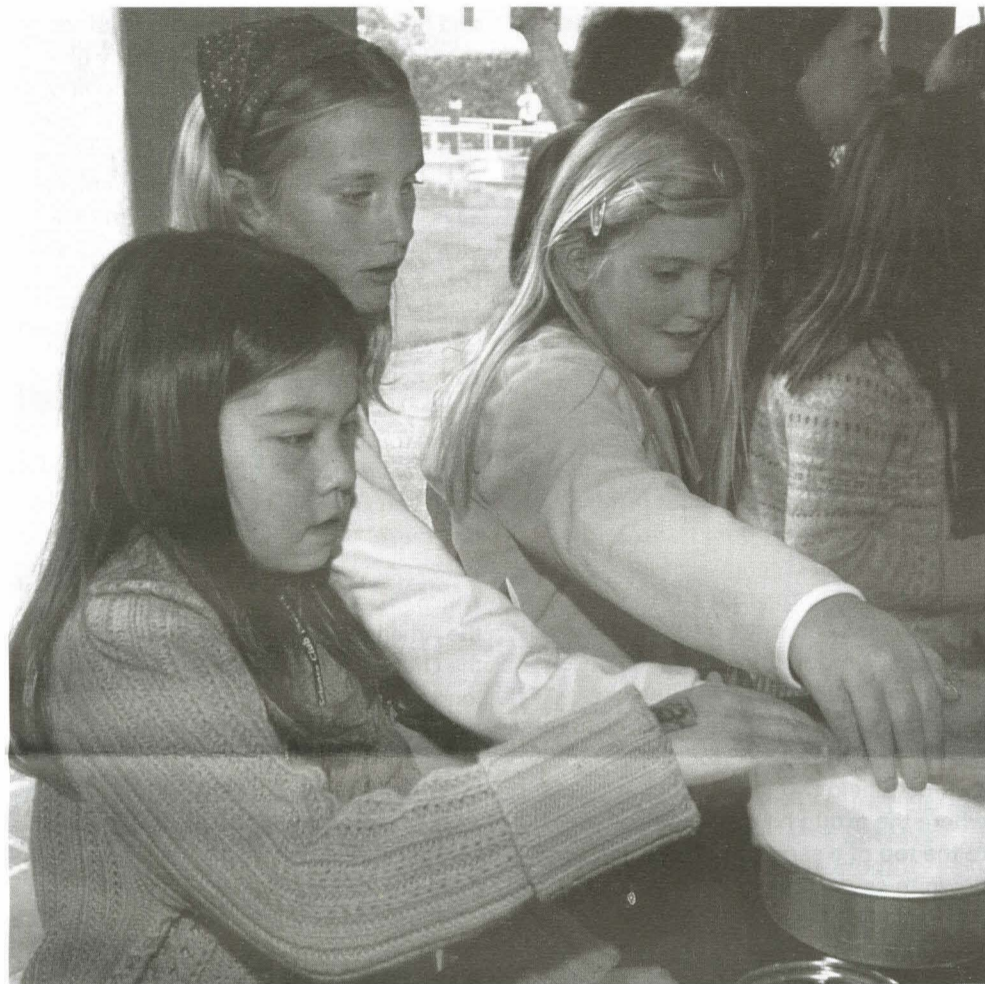


# Caltech336

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

The campus community biweekly  
March 24, 2005, vol. 5, no. 6

## Riding high on science



Girls in grades 5 through 8 flock to the hands-on science exhibits at the Sally Ride Science Festival.

Some of the girls who took part in the Sally Ride Science Festival on March 19 learned that "sour power" concerns more than the tartness factor of candy.

By attaching wires to a piece of copper and a simple household nail implanted in each of a half dozen lemons, Sour Power! workshop participants learned how the citrus fruit can be used to power an LED lightbulb.

Katya Zinn-Bjorkman, 10, and Natalie Harmon, 9, discovered that their tiny blue light illuminated when they pushed their lemons apart, rather than leaving them bunched together on a paper plate. "We spread them out and the light went on, and when they touched each other the light went out," said Zinn-Bjorkman.

The workshop was one of 23 offered to the more than 1,000 girls in grades 5 through 8 attending the festival, held annually at Caltech since 2002. Each participant took part in two workshops, which covered a gamut of topics such as chemistry, biology, medicine, aerospace, and geophysics. Many of the discovery workshops offered hands-on activities designed to spark a sense of discovery and possibility; others featured female scientists discussing their work.

Workshop presenter Meghan Adams, a Caltech graduate student studying developmental biology, told the girls how humans develop from a single cell. She also answered the eternal question:

which came first, the chicken or the egg? Her answer: the egg.

The festival is the brainchild of Ride, the nation's first female astronaut. Her mission nowadays is to improve the percentage of women in science. According to the latest statistics, eight of the 10 fastest-growing occupations are science or technology related. Yet women make up only 25 percent of the technical workforce. Beginning in about sixth grade many girls begin to turn away from these subjects, despite possessing the interest and aptitude to pursue them, Ride says.

Ride presented a keynote address and question and answer period, in which she encouraged the girls to pursue math and science and get prepared academically for all of the possibilities the future may offer them. In her case, pursuing advanced physics at Stanford University led to her joining NASA's astronaut training program and participating in two space shuttle *Challenger* missions, in 1983 and 1984. She is now a professor of physics at UC San Diego, as well as a member of the Caltech Board of Trustees.

She fielded questions including "How do you shower in space?", "Do you float while you are asleep during a space mission?", and "How long do you train for each mission?" Then came the question Ride said she usually gets first: "How do you go to the bathroom in space?"

see Ride, page 6

## A new approach to fighting cancer

The body's immune system is a remarkable defense mechanism, able to beat back a lifetime's worth of bacteria and viruses, toxins and parasites—everything, that is, except cancer. Although the immune system handles most disease-causing organisms well, it does a poor job of suppressing the growth of cancerous tumors.

Now, two Caltech scientists have come up with a novel and promising approach to fighting cancer. Lili Yang, a postdoctoral scholar, and David Baltimore, president of Caltech, professor of biology, and Nobel Prize recipient, have developed a new methodology they are calling "instructive immunotherapy" that someday may fight human cancer.

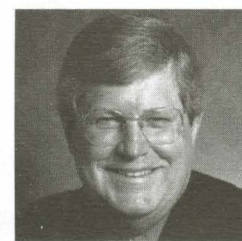
In mice and humans, hematopoietic stem cells (HSC) form both red blood cells and immune system cells. In mice, Yang and Baltimore succeeded in altering some of these HSCs to make them generate specific kinds of immune system cells, called T cells, that aggressively attack and destroy specific cancer cells. Once the mouse immune system received this enhancement, it was then able to generate its own cancer-specific T cells on a long-term basis. And, when helped by another type of immune system cell, the methodology proved to be even more powerful, achieving the complete elimination of large, established tumors. While the work is preliminary and was done with mice, says Baltimore, instructive immunotherapy could eventually be used for controlling the growth of tumors in humans.

"We've achieved something that could one day prove important," says Baltimore, who was awarded the 1975 Nobel Prize in Physiology or Medicine, "but the first caveat is that this is all with mice, and mice are often not predictive of behavior in humans." Still, he notes, "everything we have done is in principle possible to do in humans, so we plan to try to develop a system for optimizing the ability to program human stem cells."

In addition to making billions of new blood cells each day, HSCs are responsible for providing immune protection for every cell in the body. In fact, HSC transplants are routinely used to treat patients with cancers. In their case, Yang and Baltimore chose to manipulate HSCs for three reasons—because HSCs normally make T cells, they make them by the billions, and they exist in humans through their lifetime.

The first step was to design a virus, normally an infectious agent, that instead would serve as a delivery vehicle to get the T-cell genes to the HSCs. This was actually the key to the whole study. The HSCs then gave rise to two major types of T cells known as CD4 helper cells and CD8 killer cells. Together, these two cell types can

see Cancer, page 6



## Moving in

The bookcases in his office are still empty and the packing boxes full, but Dean Currie has hit the ground running. Caltech's new vice president for business and finance started in February, but began "researching" his new employer the month before. The Texas native spent some time in the Institute archives, because, he says, "I needed to somehow find a way to inject Caltech into my veins. Because it's the culture of a place that takes the longest to really understand."

see Currie, page 2

## Child Education Center turns 25

The laws of modern science say that perpetual motion is impossible, but you wouldn't know it to look at the Child Educational Center play yard one recent morning. There were kids flying on swings. Digging in a sandbox. Climbing the monkey bars. Riding trikes and scooters. Plucking a guitar and banging a toy drum. Catapulting across a tumbling mat.

This glimpse of kids at play probably demonstrates best the core philosophy of the center, now celebrating its 25th year of operation.

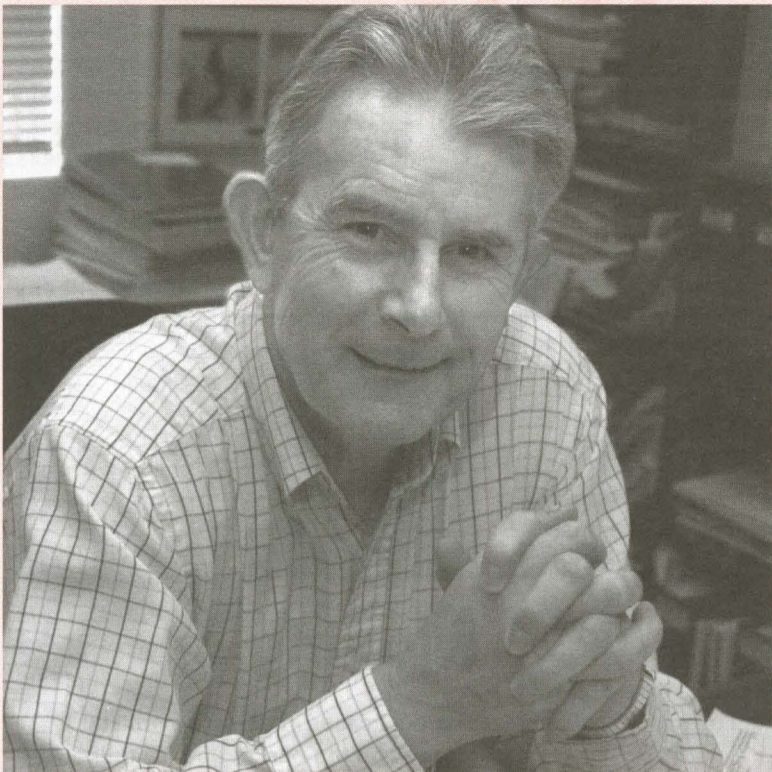
"We are trying to preserve this period of childhood that is at risk," says executive director Elyssa Nelson, who takes a visitor on a tour of the preschool program. Despite the outside world's preoccupation with formal academics, young children mostly need the chance to play with other kids and use their five senses to run and climb to their heart's desire. "They need to

see CEC, page 6



Elyssa Nelson, executive director of the Child Educational Center, visits preschoolers playing with Legos at the CEC.

# NewsBriefs



Chris Brennen has added another feather to his cap. The professor of mechanical engineering recently won the Richard P. Feynman Prize for Excellence in Teaching. The prize is awarded every year to a professor whose teaching demonstrates unusual ability, creativity, and innovation. Brennen says he is truly blessed "to have had the privilege of teaching the best students in the world." The Feynman Prize is made possible by an endowment from Ione and Robert E. Paradise.

## Personals

### Welcome to Caltech

#### February

**Israel Bran**, cashier, Caltech Bookstore; **Jens Brunner**, postdoctoral scholar in chemistry; **Arkadij Elizarov**, synthetic/physical organic chemist, chemistry and chemical engineering; **Tobias Farris**, security officer, Campus Security and Parking; postdoctoral scholars **Xile Hu**, in chemistry, and **Carene Larmat**, in geophysics; **Florence Levy**, visitor in geophysics; **Pedro Martinez-Llano**, general helper/server, Dining Services; **Maria Medina**, custodian, Physical Plant; **Mirna Murguia**, server, Dining Services; **Dan Nae**, network engineer, high-energy physics, at the European Organization for Nuclear Research (CERN), Geneva, Switzerland; **Patrick Ogle**, staff scientist, Spitzer Science Center; **Francis Pope**, postdoctoral scholar in JPL's earth science section; **Fredrik Sundstrom**, visitor in biology.

#### March

**Lisa Fields**, assistant animal laboratory technician, biology; **Sherryl Garcia**, administrative assistant, geology and geochemistry; **Julie Hiroto**, assistant to the director, Laser Interferometer Gravitational-Wave Observatory; **Edith Hong**, associate director, Alumni Fund; **Sean Luu**, library assistant, Library System; **Scott Minjarez**, stock person/cashier, Caltech Bookstore; **Gabriel Pai**, doctor, Health Center; **David Sherwood**, scientific research associate, biology.

**Robyn Puntch** has joined Caltech's Office of Development, effective March 14, as director of principal and major gifts. Her responsibilities will include overseeing the Institute's major gift fundraising staff in Pasadena and the Midwest and on the East Coast. She received her BA from Wichita State University and attended the University of Kansas School of Law, and has spent over 20 years in the development field, including at UCLA's Schools of Law and Dentistry, the Kansas Children's Service League, and the Kansas ELK's Training Center for the Handicapped, among other nonprofit institutions. She most recently served as director of development for the UCLA Medical Center Replacement Hospital.

### Retirements

**Jane Dietrich**, longtime director of periodicals in the Office of Public Relations, is retiring on March 25 after 25 years at Caltech. As director since 1987, she has overseen the publication of the Institute's award-winning periodicals: *Engineering & Science* magazine, which covers intellectual life and research activities at Caltech with the goal of promoting interest in science and scientific issues; *Caltech News*, the quarterly alumni newspaper; and *On Campus*, the formerly monthly campus newspaper that continues today as the biweekly *Caltech 336*. She joined Caltech in 1979 as a writer, became editor of *E&S* in 1984.

Immediate plans include a month with her three grandsons in London.

### Neuroeconomics and you

Colin Camerer, Axline Professor of Business Economics, and Steven Quartz, associate professor of philosophy, were featured in the March 18 *Los Angeles Times* article "Anatomy of Give and Take." Along with colleagues at Baylor College of Medicine, the researchers are working on the largest brain-imaging study ever conducted to study the nature of trust and to determine how neural networks affect the ways "people buy and sell, splurge and save."

### A patent leader

For the second year in a row, Caltech has ranked second in the number of U.S. patents issued to academic institutions in the United States. The entire University of California system was first. This result is a remarkable tribute to the creativity of our faculty, students, and staff. The entire list can be viewed online at [www.uspto.gov](http://www.uspto.gov).

## Brennen wins Feynman Prize

Chris Brennen has many pleasant memories of the "frosh camp" trips he used to make to Catalina Island with famed physicist Richard Feynman. As two Caltech faculty members who were particularly willing to accompany the new crop of Caltech freshmen on the annual orientation trip, Brennen and Feynman shared various interesting experiences at the rustic Camp Fox.

"I remember him sitting on the low stone wall at Camp Fox surrounded by maybe a hundred frosh," says Brennen, a professor of mechanical engineering, "all enthralled by his stories of particle physics, or lock picking, or Mayan hieroglyphics, or whatever."

Now, two decades later and 16 years after the passing of his friend, Brennen has been named winner of the annual Feynman Prize, Caltech's most prestigious teaching honor. The prize is given to a faculty member each year for "exceptional ability, creativity, and innovation in both laboratory and classroom instruction."

Brennen is known to the student body as an especially lucid and helpful teacher of fluid mechanics, which is a crucial field for any future engineer to master if he or she intends to work in pretty much any technical application that concerns fluid flow. The rudiments of fluid mechanics were important to the Wright brothers, and are just as important today to the designers of Mars landers—and someday perhaps even to the future designers of submarines sent to the under-ice oceans of Jupiter's moon Europa.

Brennen's research also involves acoustics, and one of the students nominating him for the Feynman Prize recalls a student field trip to the Mojave Desert, where the group hiked up several miles to the top of a sand dune, then slid back down to cause the dunes to "boom."

"Professor Brennen's enthusiasm, even in hundred-degree-plus temperatures, was an inspiration," the student said in nominating him. "His scientific intuition in the field taught me a lot."

Another student applauded Brennen's "perpetual enthusiasm that kept me interested through unavoidably dry material." Yet another remarked that he'll never forget Brennen, "dressed up in a suit, riding a bike into the swimming pool at the year-end swimming party—that is, the year-end experimental laboratory in fluid mechanics, where the undergrads compete in underwater bicycle racing."

As for his faculty peers, Caltech's professor of and executive officer for mechanical engineering, Melany Hunt, notes that Brennen "has shown us the importance of connecting with students, of encouraging their interests and their abilities, and of enjoying and appreciating student-faculty interactions."

"He has also demonstrated that it is okay to be a little crazy—such as riding a bicycle into a swimming pool—especially if it helps students to appreciate the wonder of fluid mechanics and engineering."

The bicycle stunt is a Brennen original, but is very much in keeping with the spirit and enthusiasm of the Nobel laureate for whom the award is named. Brennen says he is thrilled to be associated with Feynman through the award.

"I regard myself as being truly blessed to have lived out my career at this unique institution, to have interacted with such inspiring colleagues, and to have had the privilege of teaching the best students in the world," he says.

### Currie, from page 1

And while Currie acknowledges feeling a bit overwhelmed when he first came to Caltech, it was that very culture that quickly made him feel at home. "It's really a very easy community to come into; people are very welcoming. I like the idea that this is a place where, at least on the core campus, you can come to recognize the faces you see."

Currie comes from Rice University in Houston, where he held a similar position for 16 years ("Caltech is only my third employer, but I think it's good to get 'repotted' once in a while," he laughs), so having been born, raised, and employed in Texas you might expect to find him wearing the obligatory boots and ten-gallon hat. But his Texas inclinations were tempered by a long stint on the East Coast, where he attended Harvard University, obtaining an undergraduate degree and his master's, then serving as associate dean for administration and policy planning at the university's graduate school of business. His daughter, Sarah, is a junior there. Currie recalls giving her guidance on life as a Harvard undergrad, until, he says, "she gently reminded me my advice is 35 years out of date." Currie's son, David, a Columbia University graduate, is headed to law school in the fall.

Still, once a Texan always a Texan. In commenting on an award he received some years ago at Rice, he complemented his staff, saying, "There is an old East Texas saying, 'If you find a turtle on a fence post, you know that it had some help getting there.'" He brings the same down-home philosophy to his new Caltech post, which financially oversees everything from the Athenaeum to Human Resources to the Office of Sponsored Research. "In the long run, I hope to have the best group in the country supporting the Institute's core missions of teaching and research," says Currie. "Excellence is indivisible; you can't choose to be great as an institution and be mediocre in other areas, and I want to maintain that excellence."

"Everything we do here has to be related back to those missions. That can range from how easy can we make it for a principal investigator to see where he stands budgetarily, to how can they hire the people they need quickly and efficiently," he says. In the short run, he adds, "I need to try and understand, working with the president, the provost, and the division coordinators, how to gather the unrestricted resources we need to support the research activities that are so exciting here at Caltech."

"This is a place of original genius," he says, "and I want to do what I can to nurture that."

Currie continues to acclimate himself to California in general and Pasadena in particular. His wife, Carol, is back in Texas, readying their Houston home for sale. They have not purchased a house here yet, says Currie, but he has learned (and likes) the phrase "nonfreeway commute." As an avid hiker he looks forward to exploring the local mountains, and as an avid reader he has an "amateur's enthusiasm" for lay science books.

And while everything out of Texas purports to be big, when it comes to ego Currie leans in the other direction. He was at first reluctant to be interviewed, citing another Texas bromide: "My Texas-born daddy told me, 'Son, remember that it is better to be discovered than found out.'"

Then there is Carol, who, he says, always keeps him grounded. After receiving her PhD in public health last year, Currie congratulated her. "I told her that from now on, instead of being Mr. and Mrs. Currie, it will be Mr. and Dr. Currie. And she said, 'that's not quite right, dear. It will be Dr. and Mr. Currie.'"

# March 28—April 3, 2005

M T W T F S S

## Monday, March 28

### Geological and Planetary Sciences Seminar

155 Arms, Robert Sharp Lecture Hall, 4 p.m.—“Turbidite Paleoseismology: Testing the Method on the Cascadia Subduction Zone and the Northern San Andreas Fault,” Christopher Goldfinger, associate professor, department of oceanic atmospheric sciences, Oregon State University.

**High Energy Physics Seminar**  
469 Lauritsen, 4 p.m.—“Connecting Cosmology and Fundamental Physics,” Professor Mark Trodden, physics department, Syracuse University.

**Inorganic-Electrochemistry Seminar**  
147 Noyes, Sturdivant Lecture Hall, 4 p.m.—“Seeing and Using (Maybe) the Light with Platinum and Gold Complexes,” Richard Eisenberg, Harris Professor of Chemistry, University of Rochester.

**Applied Mathematics Colloquium**  
101 Guggenheim Lab, Lees-Kubota Lecture Hall, 4:15 p.m.—“The Discontinuous Enrichment Method for Multi-Scale Analysis,” Professor Charbel Farhat, department of mechanical engineering, Stanford.

## Tuesday, March 29

**Institute for Quantum Information Seminar**  
74 Jorgensen, 3 p.m.—“The Spectra of Quantum States and Representation Theory,” Matthias Christandl, Centre for Quantum Computation, University of Cambridge.

**Carnegie Observatories Colloquium Series**  
William T. Golden Auditorium, 813 Santa Barbara Street, 3:30 to 5 p.m.—“Finding the Most Metal-Poor Stars with the Hamburg/ESO Survey,” Norbert Christlieb, Hamburg. Refreshments.

**Aeronautics Fluid Mechanics Research Conference: Special Seminar**  
101 Guggenheim Lab, Lees-Kubota Lecture Hall, 4 p.m.—“Characterization of Slip Behavior at Liquid/Solid Interfaces: Influence of Liquid Ordering, Wall Roughness, and Substrate Surface Patterning,” Professor Sandra Troian, Moore Distinguished Scholar in Engineering and Applied Science, Caltech.

**Applied Physics Special Seminar**  
080 Moore, 4 p.m.—“Single-Molecule and Single-Particle Imaging in Solution and in Live Cells,” Professor Xiaowei Zhuang, department of chemistry and chemical biology, Harvard.

**Ulric B. and Evelyn L. Bray Seminar in Political Economy**  
25 Baxter, 4 p.m.—“Uncertainty, Risk, and Economic Development,” Hilton Root, Freeman Fellow and visiting professor of economics, Pitzer College.

**General Biology Seminar**  
119 Kerckhoff, 4 p.m.—“Intra-axonal Patterning: Its Mechanism and Implications,” Dr. Yasushi Hiromi, department of genetics, Graduate University for Advanced Studies, National Institute of Genetics, Japan.

## Wednesday, March 30

**Astronomy Colloquium**  
155 Arms, Robert Sharp Lecture Hall, 4 p.m.—“Deep Extragalactic Surveys with Chandra and XMM-Newton: Keyhole Views of the Distant X-Ray Universe,” Niel Brandt, professor of astronomy and astrophysics, Pennsylvania State University.

**Organic Chemistry Seminar**  
147 Noyes, Sturdivant Lecture Hall, 4 p.m.—“DNA as a Catalyst and Scaffold: Unconventional Applications of DNA in Bioorganic Chemistry and Nanotechnology,” Professor Scott Silverman, department of chemistry, University of Illinois at Urbana-Champaign.

**Special Information Science and Technology Seminar**  
070 Moore, 4 p.m.—Topic to be announced. Chandra Nair, department of electrical engineering, Stanford.

## Thursday, March 31

**Geology Club Seminar**  
151 Arms, Buwalda Room, 4 p.m.—Topic to be announced. Kevin Hand, graduate student, department of geological and environmental sciences, Stanford University.

**Physics Research Conference**  
201 E. Bridge, 4 p.m.—“Shooting the Moon: Probing Fundamental Gravity in the Solar System,” Tom Murphy, assistant professor of physics, UC San Diego. Refreshments, 114 E. Bridge, 3:45 p.m.

**Social and Information Sciences Laboratory (SISL) Seminar Series**  
25 Baxter, 4 p.m.—“How Hard Is It to Manipulate Voting?”, Edith Elkind, visiting scholar, UCLA.

## Friday, April 1

**Inorganic-Organometallics Seminar**  
151 Crellin, 4 p.m.—“Snapshots of Cytochrome c Folding,” Ekaterina Pletneva, postdoctoral scholar in chemistry, Caltech.

# April 4–10, 2005

M T W T F S S

## Monday, April 4

**Biophysics Lecture Series**  
153 Noyes, Sturdivant Lecture Hall, 4 p.m.— “Big Jump vs. Little Jump: How Does the Voltage Sensor in K+ Channels Move?”, Professor Paul Selvin, physics department, University of Illinois at Urbana-Champaign.

**Geological and Planetary Sciences Seminar**  
155 Arms, Robert Sharp Lecture Hall, 4 p.m.— “Some Roles of Clouds in the Tropical Climate System,” Professor Christopher Bretherton, department of atmospheric sciences, University of Washington.

**High Energy Physics Seminar**  
469 Lauritsen, 4 p.m.— “Recent Results from BaBar,” Professor Vivek Sharma, physics department, UC San Diego.

**Applied Mathematics Colloquium**  
101 Guggenheim Lab, Lees-Kubota Lecture Hall, 4:15 p.m.— “Oscillators, 1/f Noise, and Stock Market Fluctuations,” Professor James Gleeson, applied mathematics department, University College Cork, Ireland.

**Everhart Lecture Series**  
100 Broad Center, 4:30 p.m.— “The Atom Chip,” Ben Lev, graduate student in physics, Caltech. Refreshments, 4:15 p.m.

## Tuesday, April 5

**Institute for Quantum Information Seminar**  
74 Jorgensen, 3 p.m.— Topic to be announced. Jiannis Pachos, department of applied mathematics and theoretical physics, University of Cambridge.

**Ulric B. and Evelyn L. Bray Seminar in Political Economy**  
25 Baxter, 4 p.m.— Topic to be announced. William Bianco, associate professor of political science, Penn State University.

**General Biology Seminar**  
119 Kerckhoff, 4 p.m.— Topic to be announced. Professor Christine Holt, department of anatomy, Cambridge University.

## Wednesday, April 6

**Mathematical Physics Seminar**  
351 Sloan, noon— “Discrete and Essential Spectra of Schrödinger Operators,” Christian Remling, Universität Osnabrück.

**Environmental Science and Engineering Seminar**  
142 Keck, 3:40 p.m.— “Air Pollutants in Asthma and Cardiovascular Disease: Role of Oxidative Stress and Inflammation,” Andre Nel, professor of medicine, division of clinical immunology and allergy, UCLA.

**Astronomy Colloquium**  
155 Arms, Robert Sharp Lecture Hall, 4 p.m.— “On the Structure of Disk Galaxies: An HI Perspective,” Riccardo Giovanelli, professor of astronomy, Cornell.

**Information Science and Technology Seminar**  
74 Jorgensen, 4 p.m.— “Fast Overlay Tree Based on Efficient End-to-End Measurements,” Professor Gary Chan, computer science department, Hong Kong University of Science and Technology.

**Organic Chemistry Seminar**  
147 Noyes, Sturdivant Lecture Hall, 4 p.m.— “From New Reactivity to Complex and Diverse Molecular Architecture,” Professor Sergey Kozmin, department of chemistry, University of Chicago.

**Social and Information Sciences Laboratory Seminar Series (SISL)/ Theory Workshop**  
25 Baxter, 4 p.m.— “Network Design in Games with Spillover,” Sergio Currarini, professor of economics, University of Venice.

## Thursday, April 7

**Caltech Library System Presents: Quick Overview of Information Resources**  
Sherman Fairchild Library, multimedia conference room, 2 p.m.— Learn the most effective ways to use library services and resources. This session is designed especially for graduate students, postdocs, and research staff, but all are welcome. No reservations are required. Information: 395-4008 or <http://library.caltech.edu/learning/default.htm>.

**Chemical Engineering Seminar**  
106 Spalding Lab, Hartley Memorial Seminar Room, 4 p.m.— “Base Promotion of Next-Generation Ruthenium Catalysts for Ammonia Synthesis,” Professor Robert Davis, department of chemical engineering, University of Virginia. Refreshments, 113 Spalding Lab, 3:30 p.m.

**Geology Club Seminar**  
151 Arms, Buwalda Room, 4 p.m.— Topic to be announced. Professor Susannah Porter, department of geological sciences, UC Santa Barbara.

**Physics Research Conference**  
201 E. Bridge, 4 p.m.— “Looking for WIMPs in the Galactic Halo: The Search for Dark Matter Using Ultracold Particle Detectors and Other Techniques,” Daniel Akerib, professor of physics, Case Western Reserve University. Refreshments, 114 E. Bridge, 3:45 p.m.

**Social Cognition/Neuroscience Series**  
25 Baxter, 4 p.m.— “Understanding Others: Neuronal Basis of Mind Reading, Empathy, and Fairness,” Tania Singer, research fellow, Functional Imaging Laboratory, Wellcome Department of Imaging Neuroscience, University College London.

## Friday, April 8

**High Energy Theory Seminar**  
469 Lauritsen, 11 a.m.— Topic to be announced. Amir Kashani-Poor, Stanford University.

**Mathematics of Information Seminar**  
239 Moore, 3 p.m.— Topic to be announced. Chaitanya Swamy, postdoctoral scholar in computer science, Caltech.

**Inorganic-Organometallics Seminar**  
151 Crellin, 4 p.m.— “Scanning Tunneling Microscopy of Alkane Monolayers on Graphite,” Kimberly Marshall, graduate student in chemistry, Caltech.

**Kellogg Seminar**  
Lauritsen Library, 4 p.m.— “Shapes of the Proton,” Professor Gerald Miller, department of physics, University of Washington.

**German Film Series**  
Baxter Lecture Hall, 7:30 to 10 p.m.— *Hot Summer* (1968), GDR-East Germany. English subtitles.

# CampusEvents

## Monday, March 28

### Child Educational Center's Summer Program Sign-up

The CEC'S summer program, for children entering grades 1 through 7, will be held at two locations: on Michigan Avenue at Caltech, and Oak Grove, near JPL in La Cañada Flintridge. In August, we will introduce a Performing Arts Camp for children entering grades 3 through 7. In addition, before-and-after care for children attending summer school at Paradise Canyon Elementary School, and a prekindergarten program at Oak Grove, will be available. Space is limited, so early enrollment is recommended. Information and registration: (818) 354-3418.

### Men's Golf

vs. University of Redlands, at Annandale Golf Course, 12:30 p.m.

### Bolero Dance Class

Winnett lounge, 7:30 p.m.—Bolero is a dance with the passion of rumba and the grace of the waltz. This is the first class in an eight-week series. No partner or previous dance experience is required. Cost for Caltech students: \$40 for the series, \$6 per class; others, \$56 for the series, \$8 per class.

## Tuesday, March 29

### Summer Opportunities for Children

Winnett quad, noon—The WorkLife Program at Caltech has gathered information from a variety of regional programs, including day camps, overnight camps, family camps, academic programs, specialty workshops, international travel, and adventure opportunities. Drop by the Staff and Faculty Counseling Center (SFCC) table for more information.

## Wednesday, March 30

### Women's Water Polo

at Chapman University, 6 p.m.

### Banff Mountain Film Festival

Ramo Auditorium, 7:30 p.m.—Celebrate the spirit of adventure with this annual favorite, featuring the world's best films on mountain subjects. Last year's event sold out completely, so buy your tickets early. Tickets and information: 395-4652, 1 (888) 2CALTECH, or [events@caltech.edu](mailto:events@caltech.edu). Individuals with a disability: 395-4688 (voice) or 395-3700 (TDD). Visit Public Events at [www.events.caltech.edu](http://www.events.caltech.edu).

## Thursday, March 31

### Your Retirement Income Options

Winnett clubroom #1, 10:30 a.m.—This presentation provides a comprehensive discussion of all of TIAA-CREF's income options. The speaker will be Denise Carter, a registered representative of TIAA-CREF. Intended for participants who are one year or less from retirement.

### Voices of Vision Series

Beckman Auditorium, 8 p.m.—"What's a Girl Got to Be Angry About?", cartoonist Lela Lee, author of *Angry Little Asian Girl*, a series of animated short films. Admission is free.

## Friday, April 1

### Fidelity Investments One-on-One Meetings

Human Resources, 399 South Holliston, 9 a.m. to 1 p.m.—Consulting sessions are available to assist with retirement savings. Topics may include investments, advantages of tax-deferred savings, and retirement planning. To schedule an appointment, call Fidelity at (800) 642-7131.

### Research Spotlight for Staff

Beckman Institute auditorium, 10 a.m.—Caltech staff members are invited to hear James Heath, Gilloon Professor and Professor of Chemistry at Caltech, present a talk on the relationship between nanosystems, biology, and cancer.

### GSC Housing Committee Monthly Meeting

Broad Café, noon—The GSC Housing Committee meets on the first Friday of the month at noon to discuss campus housing as it applies to graduate students.

### Summer Opportunities for Children

Winnett quad, noon—The WorkLife Program at Caltech has gathered information from a variety of regional programs, including day camps, overnight camps, family camps, academic programs, specialty workshops, international travel, and adventure opportunities. Drop by the Staff and Faculty Counseling Center (SFCC) table for more information.

### Men's Tennis

vs. University of La Verne, Tennis Courts, 2 p.m.

### Women's Tennis

at University of La Verne, 2 p.m.

## Saturday, April 2

### Track and Field

Quad Meet, vs. Redlands, Whittier, Cal Lutheran, 9 a.m.

### Men's Tennis

vs. Occidental College, Tennis Courts, 9:30 a.m.

### Women's Tennis

at Occidental College, 9:30 a.m.

### Women's Water Polo

vs. Cal Lutheran University, 10 a.m.

## Sunday, April 3

### Men's Tennis

vs. alumni/faculty, Tennis Courts, 2 p.m.

### Women's Tennis

vs. alumni/faculty, 2 p.m.

### Lagerstrom Chamber Music Concert

Dabney Lounge, 3:30 p.m.—Chamber Music Palisades will perform a program that includes works by Handel, Ravel, Poulenc, Schubert, Bizet, Copland, and Muczynski. Admission is free.

## Monday, April 4

### Men's Golf

vs. Occidental College, at Annandale Golf Course, 12:30 p.m.

### Bolero Dance Class

Winnett lounge, 7:30 p.m.—Bolero is a dance with the passion of rumba and the grace of the waltz. No partner or previous dance experience is required. Classes started March 28. Cost for Caltech students: \$40 for the series, \$6 per class; others, \$56 for the series, \$8 per class.

## Tuesday, April 5

### Electric Cart Safety Training

118 Keith Spalding Building, 8:30 a.m.—This course teaches participants about safely driving electric carts on campus. Registration: 395-6727 or [safety.training@caltech.edu](mailto:safety.training@caltech.edu).

### GSC Insurance Meetings with Chickering Representatives

Winnett clubroom #1, 10 to 11:30 a.m.—David Paragone and Mike Conway from the Chickering Group will be on campus to answer any questions related to student health insurance. To schedule an appointment, contact Mike Conway at (877) 375-7912 or [mconway@chickering.com](mailto:mconway@chickering.com). Walk-ins are welcome.

## Wednesday, April 6

### Women's Water Polo

vs. Whittier College, 5 p.m.

## Thursday, April 7

### GSC Board of Directors Monthly Meeting

Winnett clubroom #1, noon—The GSC meets once a month to discuss student concerns, plan social events, and approve funding for various activities around campus. Meetings are open to the Caltech community. Please come and participate.

## Friday, April 8

### 2005 Caltech Dance Show

Ramo Auditorium, 8 p.m.—Come watch a spectacular show presented by Caltech's many talented dancers. Last year's show was an enormous success. This year we're bigger and better, with presentations of ballroom, hula, salsa, jazz, and belly dancing, among others. Information: [www.its.caltech.edu/~dance/Caltech\\_Dance\\_Show.html](http://www.its.caltech.edu/~dance/Caltech_Dance_Show.html).

## Saturday, April 9

### Men's Tennis

vs. Claremont-Mudd-Scripps, Tennis Courts, 9:30 a.m.

### Women's Tennis

at Claremont-Mudd-Scripps, 9:30 a.m.

### Women's Water Polo

vs. Claremont-Mudd-Scripps, 11 a.m.

### Men's Tennis

vs. Cal Lutheran University, Tennis Courts, 2 p.m.

### *The Return of Professor Kubínek: Certified Lunatic and Master of the Impossible*

Beckman Auditorium, 2 p.m.—Resembling a mad professor who has just taken a bit too much of his own medicine, Kubínek's experiments include outrageous theatrics, surreal feats, and mind-boggling miracles. This event is suitable for ages 8 and older. Tickets and information: 395-4652, 1 (888) 2CALTECH, or [events@caltech.edu](mailto:events@caltech.edu). Individuals with a disability: 395-4688 (voice) or 395-3700 (TDD). Visit Public Events at [www.events.caltech.edu](http://www.events.caltech.edu).

### 2005 Caltech Dance Show

Ramo Auditorium, 8 p.m.—Come watch a spectacular show presented by Caltech's many talented dancers. Last year's show was an enormous success. This year we're bigger and better, with presentations of ballroom, hula, salsa, jazz, and belly dancing, among others. Information: [www.its.caltech.edu/~dance/Caltech\\_Dance\\_Show.html](http://www.its.caltech.edu/~dance/Caltech_Dance_Show.html).

## Sunday, April 10

### Women's Tennis

vs. Chapman College, 10 a.m.

### 2005 Caltech Dance Show

Ramo Auditorium, 2 p.m.—Come watch a spectacular show presented by Caltech's many talented dancers. Last year's show was an enormous success. This year we're bigger and better, with presentations of ballroom, hula, salsa, jazz, and belly dancing, among others. Information: [www.its.caltech.edu/~dance/Caltech\\_Dance\\_Show.html](http://www.its.caltech.edu/~dance/Caltech_Dance_Show.html).

## Banjo virtuoso to perform

The Caltech Folk Music Society presents, direct from Tallahassee, acclaimed banjo player and recording artist Mary Cox. A virtuoso on the banjo and mountain dulcimer, she will be accompanied by her husband, Bob Cox, on guitar. The couple share a special bond with Caltech, where their son Robert Sidney Cox III is a graduate student in biology. The performance will take place on April 9, at 8 p.m., in Dabney Hall.

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## Mondays

### Lunchtime Pickup Ultimate Frisbee

Fox Stanton Track and Field, 12:15 p.m.—The Caltech Penultimate Frisbee players make up an informal recreational group that plays pickup games of Ultimate Frisbee at lunchtime on Mondays, Wednesdays, and Fridays. No experience is needed, and complete novices are welcome. Information: <http://mailman.its.caltech.edu/penultimate>.

### Floorball Club

Brown Gymnasium, 9 p.m.—Caltech Floorball Club holds pickup floorball games on Mondays from 9 to 11 p.m. For more information, see our website at <http://floorball.caltech.edu>.

## 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). Sponsored by the Caltech Women's Club. Information: 584-0970 or [kimdeman@yahoo.com](mailto:kimdeman@yahoo.com).

### CIT Knitters Group Meeting

256 Mudd Laboratory, South, noon—All level 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](http://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. Sponsored by the Caltech Women's Club. Information: 793-2535 or [nancyhewett@earthlink.net](mailto:nancyhewett@earthlink.net).

### Lunchtime Pickup Ultimate Frisbee

Fox Stanton Track and Field, 12:15 p.m.—The Caltech Penultimate Frisbee players make up an informal recreational group that plays pickup games of Ultimate Frisbee at lunchtime on Mondays, Wednesdays, and Fridays. No experience is needed, and complete novices are welcome. Information: <http://mailman.its.caltech.edu/penultimate>.

## 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](mailto:furnpool@caltech.edu).

## Fridays

### Lunchtime Pickup Ultimate Frisbee

Fox Stanton Track and Field, 12:15 p.m.—The Caltech Penultimate Frisbee players make up an informal recreational group that plays pickup games of Ultimate Frisbee at lunchtime on Mondays, Wednesdays, and Fridays. No experience is needed, and complete novices are welcome. Information: <http://mailman.its.caltech.edu/penultimate>.

### Caltech Tai Chi Club

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

### Caltech Chess Club

Page House dining room, 8 p.m.—Be you master or novice, you will enjoy the chess club's weekly meetings. Information: [www.its.caltech.edu/~citchess](http://www.its.caltech.edu/~citchess).

## Public Events information and tickets

395-4652, 1 (888) 2CALTECH, or [events@caltech.edu](mailto:events@caltech.edu). Individuals with a disability: 395-4688 (voice) or 395-3700 (TDD). Visit Public Events at [www.events.caltech.edu](http://www.events.caltech.edu).

**Cancer, from page 1**

recognize the foreign nature of the cancer cells used in the study and kill them. The researchers were successful in programming up to a quarter of the mouse's T cells to react to the model tumor. Even better, once the mouse's immune system was modified, it continued to produce the T cells on its own. However, with this method alone, Yang and Baltimore found that mice were only partially resistant to the tumor cells.

To achieve complete protection required boosting the animal's immune system with another type of immune cell called a dendritic cell. These cells are thought to use their long tentacle-like branches (called dendrites) to stimulate the T cells and make them more active. With this combination, Yang and Baltimore were able to achieve the complete shrinkage and suppression of even large, well-established tumors.

**CEC, from page 1**

be challenged intellectually and physically in a meaningful play-oriented context," says Nelson, who has worked at the center since its inception.

Established with Caltech funding in 1979 at the request of Jet Propulsion Laboratory employees, the preschool program has grown from four rooms serving 50 children to 10 classrooms serving 180 children. As the program has grown, so have its facilities in a building at 140 Foothill Boulevard in La Cañada Flintridge, near JPL.

The center emphasizes playtime and fun in an environment that helps children build a sense of social and emotional security. At the same time, they explore stimulating cognitive activities. A critical factor is minimizing staff turnover so that children have continuity of care, Nelson says. "The social and emotional components of development are critical," she says. "Within that, there is a need for predictable routines and an overall environment that promotes freedom of discovery and the joy of learning."

"Children have a wonderful opportunity to learn from one another. The ability to navigate the social world is so important in helping them learn how to function in a group, how to be a leader, how to negotiate, how to ask for what they need and want."

The center's school-age program serves 450 children in five locations both after school and during the summer, including one at Caltech.

Guided by a board of trustees, the CEC plans to collaborate more in the future with the Children's Center at Caltech to provide integrated services to the campus and JPL communities. Another goal is to

Yang recalled her reaction to the first positive results: "It was a great surprise that the method worked so well. This level of efficacy makes us believe that the method may have real therapeutic potential."

The next step, says Yang, will be to repeat the experiment, this time using conditions that more closely approximate human tumors. After that, if things hold up, the next step will be to start thinking about human trials.

"Producing a state of antitumor immunity has been a dream of immunologists for years, but has been unrealized in humans," says Baltimore. "Here we've developed a methodology that provides a new opportunity to realize this goal. We certainly hope that it will prove to be effective in humans."

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increase the number of Caltech community families, which currently represent about 5 percent of the total.

"I cannot think of a better place for our daughter," says David Levy, director of Caltech's Financial Aid Office. "They've challenged her socially, emotionally, and intellectually in a very seamless manner."

His daughter, Zoë, now in kindergarten, started out in the center's infant room when she was eight weeks old. Zoë continues to visit the teacher who took care of her when she was a baby, he says.

"We wanted something that was going to stimulate her socially as well as intellectually," says his wife, Maureen McRae Levy, who directs the financial aid office at Occidental College. "What sold us most was the loving and caring staff." Another plus in her book is that the center works hard to celebrate cultural diversity and leaves it to families to celebrate major holidays as they see fit at home, so that kids don't feel left out or "different."

Another fan is Eloisa Imel, who manages Postdoctoral Scholars/Visitors Services in Human Resources. She and her husband, David Imel, who also works on campus, have developed strong relationships both with the center's teachers and the parents of their two children's classmates. She is equally impressed by the deluxe outdoor space that features a large play yard, and a garden with green grass and shade.

"If you choose to work as I do and have your children in day care, the combination of the dedicated teachers and the facilities make it easy to decide," she says.

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**Ethnic Visions Film Series ahead**

Karin Anna Cheung and John Cho star in Justin Lin's *Better Luck Tomorrow* (2002).

In the movie *Better Luck Tomorrow* (2002), overachieving high school students from the suburbs spend their leisure time pursuing extracurricular—and criminally entrepreneurial—activities.

And in *ABCD* (1999), a son and a daughter living in New Jersey give their widowed immigrant mother grief and delight by turns through the divergent life choices they make.

According to Robert Rosenstone, a professor of history at Caltech, these two films are unusual because the ethnicity of the characters—Asian in the first, East Indian in the second—is largely beside the point. In Humanities 119, dubbed the Ethnic Visions Film Series, Rosenstone will lead a class of Caltech students through nine selections from this cinematic wave.

"Recently I've noticed that there are many more ethnic filmmakers and a different kind of film is emerging," Rosenstone says. "They're all provocative, but many of these films are less concerned with portraying aggression and inter-ethnic conflict with the Anglo majority, and more concerned with the particular ethnic group itself, its history, problems and future." In each movie, the main character's goal or journey leads him or her somewhere besides the great American melting pot.

Hollywood movies, especially big-budget projects, have a history of ignoring minority communities, Rosenstone says. When minorities are visible, they are often misrepresented. We're all familiar with the same recycled stereotypes: the Asian whiz kid; the Latina maid; the African American drug dealer; and the Middle Eastern terrorist. Inscrutable accents are optional.

Rosenstone says that he was encouraged to go ahead with Ethnic Visions by the films that are regularly shown on campus as well as the screenings of films sponsored by international student clubs, which routinely draw sizable audiences.

This new series will also have the backing of the Administrative Committee on Diversity and Minority Affairs.

"It's nice when you bring in the actual filmmaker to discuss the film," Rosenstone says, adding that he will be able to bring in four or five directors.

"The first two or three films will be classics," he says. "Many of the works will be by independent or even first-time filmmakers." Though the list of films to be shown is tentative, four filmmakers have confirmed their participation.

Kicking off the course on March 31 will be *The Jazz Singer* (1927), starring Al Jolson in the first talkie ever made. On April 21, Tim Bui will discuss his film *Green Dragon* (2002); an April 28 screening of *Maryam* (2000) will be followed by a talk with Ramin Serry; Justin Lin will discuss *Better Luck Tomorrow* on May 5; and Krutin Patel will be on hand to discuss *ABCD* on May 19.

For further information, contact Sheryl Cobb at sjc@hss.caltech.edu. All screenings are open to the Caltech community and will take place on Thursday evenings in Baxter Lecture Hall.

**Ride, from page 1**

The day's intermittently rainy weather didn't seem to detract from attendance: hundreds of girls registered at the event, joining about 800 who had preregistered. The festival also offered workshops for parents and educators, as well as a street fair.



A participant in the Sour Power! discovery workshop turns lemons into a power source for an LED light bulb.

# Caltech 336

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