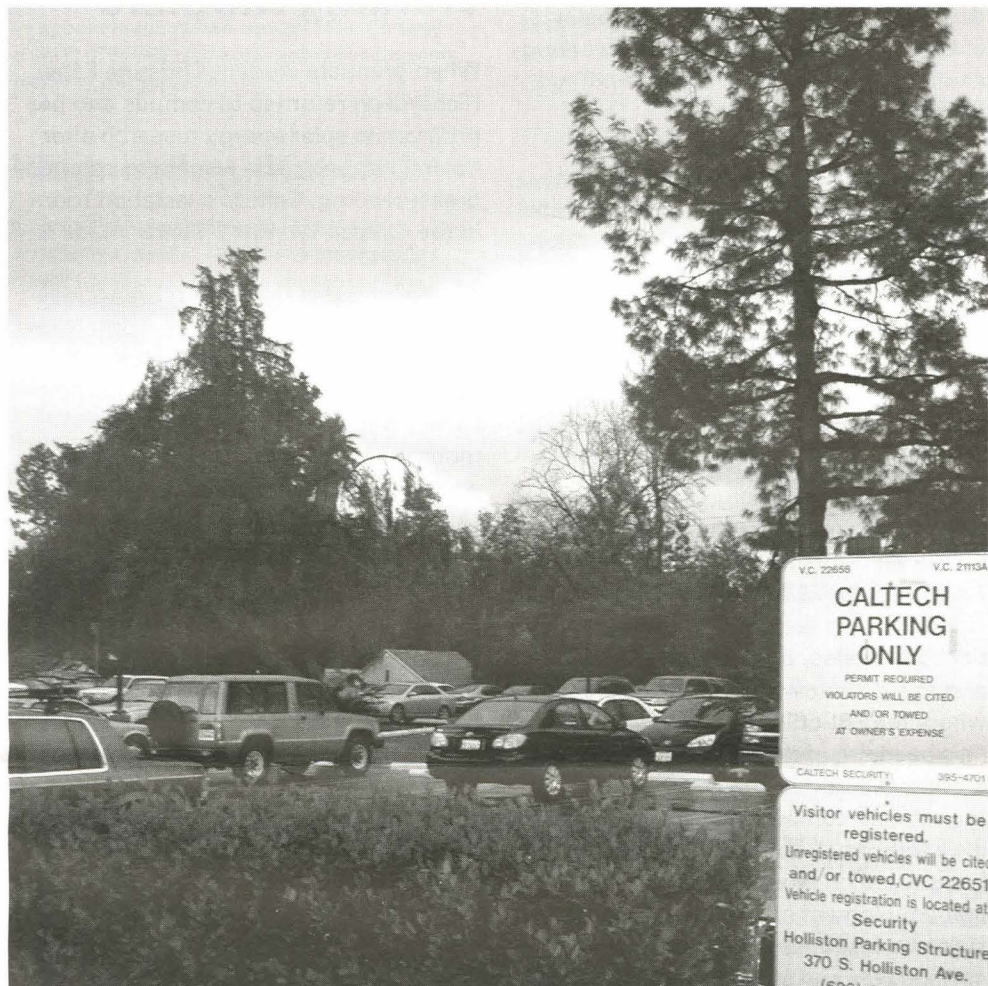


Caltech336

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

The campus community biweekly
February 24, 2005, vol. 5, no. 4

Rain spells delays



Cars sit in one of the two Holliston Avenue parking lots on campus that were recently closed. For a few weeks, a shuttle will take commuters to their cars at CIT².

A parking shortfall resulting from the February 22 closure of two campus lots on Holliston Avenue prompted the Institute to open to Caltech staff members a parking lot at CIT², the former St. Luke Medical Center in northeast Pasadena, and ferry them to the campus and back.

This measure to ease the parking squeeze is being made in the midst of several ongoing campus construction projects. These include the finishing touches on the new subterranean parking structure south of California Boulevard and prep work for modular housing units on the two Holliston lots in advance of the renovation of student housing. The units will be used as temporary housing while the dormitories, known as the South Houses, are modernized.

"It's a temporary thing. It's pending the opening of the new parking structure," says Gregg Henderson, chief of campus security and parking services about parking at St. Luke. "We cannot delay any of the commitments that have been made concerning the modular structures." Preparations must be made before the arrival of 16 portable housing units that will form an enclosed village on the lots and on the lawn north of Avery House.

The two lots just east of Avery House are primarily used during the workweek. A shuttle service has been established between St. Luke and the campus. "We are anticipating using two shuttles and

we're looking at 25-passenger vans," Henderson says. "There'll be one pick-up and drop-off point at the corner of Holliston and San Pasqual Street, by the JPL shuttle stop."

The shuttles are scheduled to run every 15 minutes from 4:45 a.m. to 9:30 a.m., and from 1:45 p.m. to 6 p.m. in the afternoon. This parking arrangement is expected to last between four and six weeks.

"The loss on campus is 125 spaces and that is how many will be available at CIT² on a first-come, first-served basis." Television and film crews, who bring their own parking needs along with their cameras, use the old St. Luke hospital site extensively. Doctor's offices on the premises also provide parking to employees and patients.

"The concept is that every vehicle that gets parked up there creates one space here," he adds. "A lot of discussion went into what we're going to do and we are working it as best as we can."

The situation has come to this point, Henderson says, because of an unusually wet winter that contributed to delays on the underground structure. The top and sides of the three-level structure need to be filled in with dirt, which turns to mud when wet. Cameras, an elevator, and emergency phones are also being installed, and the structure—with its 700

see *Parking*, page 6

Ride launches festival

Girls, let's do launch! That's the way one waggish Florida newspaper headlined a story on the Sally Ride Science Festival, which comes to Caltech on Saturday, March 19. As you might guess, the festival is the brainchild of Ride, America's first female astronaut, and is primarily intended for girls in grades five through eight, their parents, and educators. That age group is a critical time for girls and science, since it's the time when they begin to drift away from their natural interests in science and math. That's a situation that Ride, the Ingrid and Joseph Hibben Professor of Space Science and professor of physics at UC San Diego, has devoted a large part of her life to reversing.

Over the last few years Ride has organized these festivals around the country, attracting hundreds of girls and parents for a day of science, socializing, and fun. Her company, Sally Ride Science, is dedicated to creating events, programs, and

see *Sally Ride*, page 6

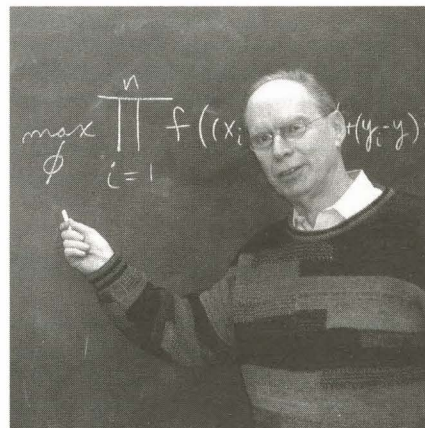
Professor helps Numb3rs add up

The Caltech-caliber calculations seen in *Numb3rs*, airing Fridays at 10 p.m. on CBS, are aided by professor and Caltech alum Gary Lorden, BS '62, who serves as *Numb3rs*'s mathematics advisor, and by scenes actually shot at the Institute.

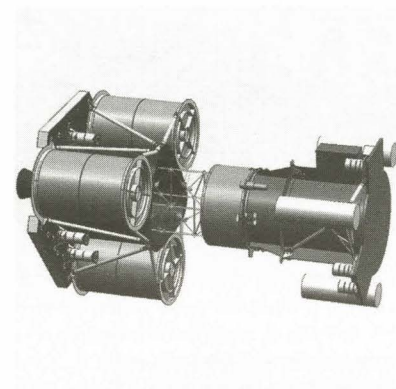
Numb3rs, which premiered January 23, covers familiar TV crime-busting territory—foiling bioterrorism, outwitting bank robbers, stopping a serial rapist—but with a twist: FBI Special Agent Don Eppes (Rob Morrow, of *Northern Exposure* fame) enlists the help of his brilliant younger brother, Charlie (David Krumholtz), a math professor, to solve some of the bureau's most vexing cases.

Week after week, viewers see how Charlie uses actual mathematical methods to help crack tough cases.

see *Numb3rs*, page 2



Professor of Mathematics Gary Lorden shares a statistics equation he developed for the pilot of *Numb3rs*.



http://www.nustar.caltech.edu

Hefty telescope to float

Assuming all goes well this April, a high-altitude balloon flight in New Mexico will help to demonstrate whether an innovative telescope is ready to launch into space.

If chosen by NASA, the telescope, called the Nuclear Spectroscopic Telescope Array, or NuSTAR for short, should be orbiting Earth by the end of the decade, taking the first focused high-energy X-ray pictures of matter falling into black holes and shooting out of exploding stars. In addition, it will give scientists an unprecedented look at the origins of the heavy elements we're all made of.

The high-altitude balloon flight in New Mexico will help to demonstrate whether the advanced sensors invented and built at Caltech are ready for space. The balloon phase of the project sports the intuitive acronym HEFT (for High-Energy Focusing Telescope), and will mark the first time that focused pictures at high-energy X-ray wavelengths will have been returned from high altitudes. High-energy X rays tend to penetrate the gas and dust of galaxies much better than the soft X rays observed by NuSTAR's forerunners. In fact, even the HEFT data from the balloon is expected to be superior to any data returned so far from satellites at high X-ray energies.

see *NuSTAR*, page 6

Spitzer lifts the cosmic veil

Where did we come from? Are we alone? These questions have driven scientific inquiry for centuries, and frame the agenda for modern astrophysical studies. Since August 2003, astronomers have had a powerful new tool for delving into these mysteries: the Spitzer Space Telescope, developed and launched for NASA under the leadership of the Jet Propulsion Laboratory and now operated by Caltech's Spitzer Science Center. On Wednesday, March 9, at 8 p.m., Michael Werner, the Spitzer project scientist at JPL, will discuss the Spitzer in his talk, "Lifting the Cosmic Veil: The Infrared

see *Spitzer*, page 6

NewsBriefs



In Vienna, the good Duke has been so lax in enforcing the laws that the citizenry is in turmoil. In order to observe his subjects, he disguises himself as a friar and leaves his deputy Angelo in his place to clean up the town and mete out punishment. Caught up in the plot of *Measure for Measure* are the lovers Claudio and Juliet, who bears Claudio's child. Here Claudio's sister Isabella, played by graduate student Tosin Otitoju, pleads with Angelo, Todd Brun, PhD '94, for her brother's life. Angelo, however, has his own ideas about how to make things right again. Gavin Claypool, production coordinator on the latest TACIT play, says, "It's interesting that the issues of personal behavior and the state's interest in it are in the news. It shows that Shakespeare wrote about universal themes." This production of Shakespeare's darkest of dark comedies, directed by Shirley Marneus, will be presented this weekend and the next in Ramo Auditorium. For details and tickets, contact Caltech Public Events at 395-4652.

Personals

Welcome to Caltech

January

Sebastian Breitenbach, visitor in environmental science and engineering; **Jennifer Chen**, major gifts officer, Development and Alumni Relations; research technicians **Alan Fung**, engineering and applied science, and **Andrew Hsieh**, biology; **Ai Inada**, researcher, planetary science; **Michael Slessor**, licensing associate, Office of Technology Transfer; **Charles Williams**, visitor in geophysics.

February

Leonard Edwards Jr., associate desktop support, Information Technology Services; **Maria Flores**, housekeeper, Athenaeum; **Stephanie Follis**, administrative assistant, Financial Aid Office; **Angelica Maria Gonzalez**, environmental, health, and safety technician, Safety Office; **Mani Hossein-Zadeh**, postdoctoral scholar in applied physics; **Desirea Mecenas**, assistant research technician, biology; **Greg Miles**, security officer, Campus Security and Parking Services; **Toyoki Nishimata**, visitor in chemistry; **Sheyla Perez Martinez**, research aide, biology; **Cheryl Petterson**, scanning clerk, Development and Alumni Relations; **Hardy Siahaan**, visitor in control and dynamical systems; **Husen Zhang**, postdoctoral scholar in geobiology.

Honors and awards

Mark Konishi, Bing Professor of Behavioral Biology, and Fernando Nottebohm of Rockefeller University have jointly received the American Philosophical Society's 2004 Karl Spencer Lashley Award for their work illuminating the physiological basis of the vocal-learning abilities of certain birds. Presented at the society's autumn general meeting in Philadelphia, the award was established in 1957 by a gift from Dr. Lashley to recognize work on the integrative neuroscience of behavior. Konishi specifically was recognized for his experiments demonstrating that birds "depend heavily on their ability to monitor their own voice, both to produce previously memorized songs and to maintain them once developed." A member of the Caltech faculty since 1975, Konishi received his BS and MS from Hokkaido University and his PhD from UC Berkeley. The American Philosophical Society was founded in 1743 by Benjamin Franklin.

David Goodstein, Caltech's vice provost, professor of physics and applied physics, and Gilloon Distinguished Teaching and Service Professor, has had his book *Out of Gas: The End of the Age of Oil* (New York: W. W. Norton & Company, 2004) chosen by the *New York Times Book Review* as one of its 100 Notable Books of the Year for 2004. In the book, Goodstein sees difficult choices facing human society worldwide as global oil production peaks in the near future. "The crisis will occur, and it will be painful," he writes. "Civilization as we know it will come to an end sometime in this century unless we can find a way to live without fossil fuels." He dedicates the book "to our children and grandchildren, who will not inherit the riches that we inherited." After receiving his BS from Brooklyn College in 1960 and his PhD from the University of Washington in 1965, Goodstein joined Caltech's faculty in 1966 as a research fellow in physics. He became assistant professor of physics in 1967 and was appointed professor of physics and applied physics in 1976. He was named vice provost in 1987 and Gilloon Professor in 1995. Other works by Goodstein include his award-winning PBS series *The Mechanical Universe*, and the best-selling book *Feynman's Lost Lecture*.

David Levy, director of financial aid, has been named to receive the College Board Western Regional Assembly's Exemplar Award in recognition of "his exceptional professional service and contributions." The award announcement continues: "An exceptionally dedicated financial aid expert, Levy is known for tirelessly traveling throughout the region to offer sage advice on financially planning for higher education to prospective college students and their families." Noted for his participation in annual events such as Cash for College and in collaborative productions for media such as newspapers and local news channels, "Levy is admired and respected by all who know him." He will be recognized at the College Board's Western Regional Conference in San Diego on Sunday, February 27, for his many accomplishments.

Numb3rs, from page 1

Meanwhile, an array of numbers, calculations, and equations scribbled on blackboards or overlaid through special effects offers a glimpse into the mind of the math whiz who teaches at "Cal Sci"—the California School of Science and Technology.

Caltech's imprint on *Numb3rs* is no accident. The show's creators—Pasadena residents Cheryl Heuton and Nicolas Falacci—approached the Institute last summer about shooting some scenes on campus, and for help in making the math as realistic as possible. That led the husband-and-wife team to Lorden, Caltech's executive officer for mathematics, who was soon hired as a consultant.

"I was thrilled to see the show approach Caltech," says Lorden. He finds it remarkable that in the finished product, *Numb3rs* depicts "math as not only interesting, but actually cool and sexy. It also does a good job of showing the reality of being stuck on problems, and working and suffering along the way to finding a solution."

Lorden's job is to help the scripts credibly utilize bona fide mathematical techniques such as cryptography, combinatorics, number theory, and epidemiology statistics in solving crimes. Besides reviewing scripts for mathematical authenticity, he has also been asked to come up with math or physics concepts and equations that provide the "mathematical background to what some of the characters are doing, saying, or thinking. This could include pictures or things to write in notepads that the camera might see, or stuff that Charlie writes on a blackboard or whiteboard."

He also has assisted by writing equations as needed, both in campus shoots and at a downtown Los Angeles studio where the FBI-office scenes are filmed. "It's been fun and stimulating, hanging around with the actors and writers on the set, and somewhat glamorous, but it's a *long day*," Lorden says. Initially, he assisted on story lines involving the epidemiology of human virus transmission, the responses of skyscrapers to earthquakes and strong winds, the aerodynamics of falling human bodies, and predictive models regarding criminal behavior. Also pitching in as needed are math professors Dinarkar Ramakrishnan and Rick Wilson, as well as associate professor Nathan Dunfield.

A touch of the TV spotlight has also fallen on one of Wilson's graduate students, David Gryniewicz. "The producers thought David Krumholtz would have trouble writing some of the complicated numerical expressions, and my hand looks similar to his," says Gryniewicz, who is studying combinatorics. During a shooting period when Lorden was unavailable, he spent more than 30 hours standing in as both hand-double and math advisor.

The Institute came close to being identified as Charlie's university, according to Caltech public events director Denise Nelson Nash. The stumbling block was that network officials were unwilling to allow the Institute script review.

"CBS wanted to have complete creative control, which was fine with us, as long as there were no illegal or illicit relationships or activities depicted involving Caltech people." But the network decided against allowing even that level of oversight, Nelson Nash said.



The Women's Center—whose staff includes, left to right, Emery Johnson, administrative assistant; Candace Rypisi, director; and Jennifer Cichocki, assistant director—hosts the campus lactation room.

Lactation room helps working mothers

When graduate student Christine Esber Richardson returned to campus and her program in solar energy research after having her baby, she wanted to continue breast-feeding. Caltech's lactation room in the Caltech Women's Center made it possible.

"We definitely knew that breast milk was best for the baby," says Esber Richardson, who pumped twice a day and also rode her bike home at lunchtime to feed baby Aiden until he was seven months old. "It was great to know that I could feed him and still work on campus. I knew that I could go home and be sure that my milk production would be sufficient to provide for his nutrition."

Esber Richardson, pursuing a program in applied physics, is one of seven women, mostly staff and graduate students, who have used the lactation room during the past year. Located in the Center for Student Services, the space otherwise serves as the Women's Center library-lounge, and contains breast-feeding information, a hospital-caliber breast pump, a small refrigerator in which users can store expressed milk, nearby access to a sink, and a comfortable couch and chair.

Employer-provided lactation rooms are a national trend, says Amy Seidel Malak, who coordinates the WorkLife Program for the Staff and Faculty Consultation Center, oversees the lactation room, and provides lactation classes. Such services are increasingly mandated by law. California in 2002 joined a growing number of states requiring employers to provide break time, and a room, other than a bathroom stall, where women can express milk.

Society's growing recognition that mother's milk provides the best nutrition for infants aside, the logistics of breast-feeding can seem insurmountable to new mothers returning to work, Malak says. If the location isn't convenient, women may find it difficult to pump frequently enough to maintain an adequate milk supply.

"We've made great strides, getting a place on campus, but that was a first step," Malak says, adding that she'd like to see several such rooms placed strategically around the campus. She also plans to build a "holistic" program that includes prenatal and postnatal breast-feeding support, as well as assistance in locating quality childcare.

Jean Shin, Athenaeum marketing and membership coordinator, had a less positive experience with the lactation center, but applauds the effort. "They were great with follow-up, and asked me what worked and what didn't." She used the room for only one week, saying, "You

see *Women's Center*, page 6

February 28—March 6, 2005

M T W T F S S

Monday, February 28

Geological and Planetary Sciences Seminar
155 Arms, Robert Sharp Lecture Hall, 2 p.m.—“Experimental Condensation of Silicate Gases: Application to the Formation of the First Solar Minerals and of Interstellar Dust Particles,” Alice Toppani, postdoctoral researcher, Institute for Geophysics and Planetary Physics, Lawrence Livermore National Laboratory.

High Energy Physics Seminar
469 Lauritsen, 4 p.m.—“CP Violation in the Lepton Sector,” Stephen Parke, theoretical physics department, Fermi National Accelerator Laboratory.

Tuesday, March 1

Caltech Library System Presents: Open Access
Sherman Fairchild Library, multimedia conference room, noon to 1:30 p.m.—An overview of the many faces of Open Access. Topics covered will include disciplinary archives, dissertations, institutional archives, overlay journals, born-OA journals, converted-OA journals, Walker-Prosser OA-by-the-article journals, and scanned heritage (EMANI, Gallica, etc.). There will be a special update on the NIH policy. Registration and information: <http://library.caltech.edu/learning/default.htm>.

Carnegie Observatories Colloquium Series
William T. Golden Auditorium, 813 Santa Barbara Street, 3:30 to 5 p.m.—“Lyman-alpha in the Intergalactic Medium: Beyond the Forest,” Steven Furlanetto, postdoctoral scholar in physics, mathematics and astronomy, Caltech. Refreshments, 3:30 p.m.

Ulric B. and Evelyn L. Bray Seminar in Political Economy
25 Baxter, 4 p.m.—Topic to be announced. Professor Andrew Martin, department of political science, Washington University in St. Louis.

Chemical Physics Seminar
147 Noyes, Sturdivant Lecture Hall, 4 p.m.—“Spatiotemporal Correlations in Liquid Water: 1/f Noise as a Probe,” Professor Ramakrishna Ramaswamy, Nehru Research Center, New Delhi.

Wednesday, March 2

Technical Computing with MATLAB and Simulink
Beckman Institute auditorium, 8:30 to 11 a.m.—“Technical Computing with MATLAB and Simulink,” Pete Stagg, Mathworks. This technical session will introduce how MATLAB and its family of products are used as a flexible platform for technical computing and application development in engineering, math, and science curricula and research. Sponsored by Information Technology and Services (ITS). Registration: www.mathworks.com/seminars/caltech.

Environmental Science and Engineering Seminar
142 Keck, 3:40 to 5 p.m.—“The Water Framework Directive as the Paradigm for the Ecological and Chemical Protection of European Surface Waters,” Steven Eisenreich, unit head, Inland and Marine Waters Unit, Joint Research Centre.

Astronomy Colloquium
155 Arms, Robert Sharp Lecture Hall, 4 p.m.—Topic to be announced. Tsvi Piran, Moore Distinguished Scholar in physics, Caltech.

Information Science and Technology Seminar
74 Jorgensen, 4 p.m.—Topic to be announced. Professor Asuman Ozdaglar, department of electrical engineering and computer science, MIT.

Organic Chemistry Seminar
147 Noyes, Sturdivant Lecture Hall, 4 p.m.—“Recent Advances in Combination of Metal and Enzyme Catalysis for Asymmetric Synthesis,” Professor Jan Bäckvall, department of Organic Chemistry, Stockholm University.

Special Seminar in Applied and Computational Mathematics
306 Firestone, 4 p.m.—“Time-Asymptotic Behavior in Hamilton-Jacobi Equations,” Professor Jean-Michel Roquejoffre, applied mathematics, University of Toulouse.

Thursday, March 3

Bioengineering Seminar Series
142 Keck, 4 p.m.—“Running at the Solid/Fluid Interface: Biomechanics of Sand Locomotion in Lizards,” Wyatt Korff, integrative biology department, UC Berkeley.

Everhart Lecture Series
101 Guggenheim Lab, Lees-Kubota Lecture Hall, 4 p.m.—“Were Microbes the Architects of Ancient Shorelines?,” Tanja Bosak, graduate student in geobiology, Caltech.

Geology Club Seminar
151 Arms, Buwalda Room, 4 p.m.—“Paleointensity Variations in the Cretaceous Long Normal Polarity Interval as Constrained by Marine Magnetic Anomalies,” Steve Cande, professor of geophysics, Scripps Institution of Oceanography.

Friday, March 4

High Energy Theory Seminar
469 Lauritsen, 11 a.m.—“Topological String Theory on $H_3 \times S^3$,” Martijn Wijnholt, research associate in physics, Princeton University.

Mathematics of Information Seminar
239 Moore, 2:30 to 4 p.m.—Topic to be announced. Chaitanya Swamy, postdoctoral scholar, Center for the Mathematics of Information (CMI), Caltech.

Inorganic-Organometallics Seminar
151 Crellin, 4 p.m.—“Improvement of Ruthenium-Catalyzed Olefin Metathesis Reaction Efficiency Through Understanding Catalyst Stability,” Soon Hyeok Hong, graduate student in chemistry, Caltech.

March 7–13, 2005

M T W T F S S

Monday, March 7

- Biophysics Lecture Series**
153 Noyes, Sturdivant Lecture Hall,
4 p.m.—“Exploring the Protein Funnel
Energy Landscape for Folding and
Function,” Professor José Nelson
Onuchic, department of physics, UC
San Diego.
- Geological and Planetary Sciences
Seminar**
155 Arms, Robert Sharp Lecture Hall,
4 p.m.—“Microbial Activities in Deep
Subseafloor Sediments,” Steven
D’Hondt, professor of oceanography,
University of Rhode Island.
- High Energy Physics Seminar**
469 Lauritsen, 4 p.m.—“Simple Atoms
and the Determination of Fundamental
Constants,” Professor Andrzej Czarnecki,
department of physics, University of
Alberta.

Applied Mathematics Colloquium
101 Guggenheim Lab, Lees-Kubota
Lecture Hall, 4:15 p.m.—“On the
Regularity Conditions for the Navier-
Stokes and the Related Equations,”
Dongho Chae, visiting professor,
Center for Scientific Computing and
Mathematical Modeling, University of
Maryland, College Park.

Tuesday, March 8

- Carnegie Observatories Colloquium
Series**
William T. Golden Auditorium, 813 Santa
Barbara Street, 3:30 to 5 p.m.—“The Star
Formation Histories and Stellar Masses
of Red Galaxies at $z>2$,” Ivo Labbe,
Observatories of the Carnegie Institution
of Washington (OCIW). Refreshments,
3:30 p.m.
- Chemical Physics Seminar**
147 Noyes, Sturdivant Lecture Hall,
4 p.m.—“Stochastic Chemistry: Kinetics
and Thermodynamics of Living Systems
and Cellular Signal Transduction,” Hong
Qian, associate professor, department
of applied mathematics, University of
Washington.

General Biology Seminar
119 Kerckhoff, 4 p.m.—“Beyond the
Double Helix: Writing and Reading the
‘Histone Code,’” Professor David Allis,
Rockefeller University.

Wednesday, March 9

- Astronomy Colloquium**
155 Arms, Robert Sharp Lecture Hall,
4 p.m.—“Observations of Ultraluminous
Infrared Galaxies with the IRS on Spitzer,”
Lee Armus, Spitzer Science Center,
Caltech.
- Caltech Presidential Lecture Series
on Achieving Diversity in Science,
Math, and Engineering**
Beckman Institute auditorium, 4 p.m.—
“Stars in Her Eyes: From Poet to Rocket
Scientist to Chancellor,” Dr. France
Córdova, chancellor, UC Riverside. This
event is free and open to the public.
No tickets or reservations are required.
Free parking is available. Please go to
the parking structure at 370 S. Holliston
Avenue for a parking permit and
directions to the auditorium.
- Organic Chemistry Seminar**
147 Noyes, Sturdivant Lecture Hall,
4 p.m.—“Asymmetric Synthesis: From
Transition Metals to Organocatalysis,”
Professor Pavel Kocovsky, department
of chemistry, University of Glasgow.
- Earnest C. Watson Lecture Series**
Beckman Auditorium, 8 p.m.—“Lifting
the Cosmic Veil: The Infrared Universe
Revealed by the Spitzer Space
Telescope,” Michael Werner, project
scientist, Spitzer Science Center.
Admission is free.

Thursday, March 10

- Caltech Library System Presents
Endnote for Absolute Beginners**
Sherman Fairchild Library, multimedia
conference room, 2 to 3:30 p.m.—Learn
what Endnote is and how it can work
for you to create bibliographies within a
document, and as a search interface to
online databases and catalogs allowing
you to directly export records to your
computer. Not for Mac users. Space is
limited. Registration: <http://oliphant.library.caltech.edu/forms/cls-classes>.
Walk-ins will be accepted only if space
permits.
- Chemical Engineering Seminar**
106 Spalding Lab, Hartley Memorial
Seminar Room, 4 p.m.—“Rheology
and Microrheology of Composite Actin
Networks,” Professor David A. Weitz,
Division of Engineering and Applied
Sciences, Harvard University. Refresh-
ments, 113 Spalding Lab, 3:30 p.m.

Geology Club Seminar
151 Arms, Buwalda Room, 4 p.m.—
“Neutron Computer Tomography and
the Search for Life in Rocks,” Dawn
Sumner, associate professor, department
of geology, UC Davis.

**Social and Information Sciences
Laboratory Seminar Series (SISL)**
25 Baxter, 4 p.m.—“Predicting the
‘Unpredictable,’” Rakesh Vohra, Kellogg
Professor of Managerial Economics and
Decision Sciences, MEDS department,
Kellogg School of Management,
Northwestern University.

Friday, March 11

- High Energy Theory Seminar**
469 Lauritsen, 11 a.m.—Topic to be
announced. James Liu, assistant
professor, department of physics,
University of Michigan, Ann Arbor.
- Mathematics of Information
Seminar**
239 Moore, 3 to 4:30 p.m.—Topic to be
announced. Daniel Marco, postdoctoral
scholar, Center for the Mathematics of
Information, Caltech.
- Inorganic-Organometallics Seminar**
151 Crellin, 4 p.m.—“Selectivity
Trends in C-H Bond Activation of Alkyl-
Substituted Benzenes by Cationic Pt(II)
Complexes,” Tom Driver, postdoctoral
scholar in chemistry, Caltech.

CampusEvents

Monday, February 28

Hustle Dance Class
Winnett lounge, 8 p.m.—This is the third class in a four-class hustle dance series taught by a professional instructor. No partner is required, but some previous knowledge of hustle is helpful. Cost for Caltech students: \$6 per class. For non-students, \$8 per class.

Tuesday, March 1

Student Insurance Questions Answered
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, please contact Mike Conway at (877) 375-7912 or mconway@chickering.com. Walk-ins are welcome.

Wednesday, March 2

Rita Arditti: Searching for Life
Athenaeum, noon—Author and biologist Rita Arditti will discuss the Grandmothers of the Plaza de Mayo, a group of Argentinean women who acted as detectives and human-rights advocates as they searched for their grandchildren. These women helped create a genetic data bank that identified some of the children born in detention centers and given to other families during the dictatorship that ruled Argentina from 1976 to 1983. RSVP: wcenter@studaff.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, March 3

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.

Men’s Golf
at Cal Lutheran University, 12:30 p.m.

Beginning Ballroom Team Class: Standard Dances
Winnett lounge, 8 p.m.—The beginning ballroom team classes concentrate on the waltz, tango, foxtrot, quickstep, and Viennese waltz dances. No partner is necessary. The cost is \$25 for Caltech students and \$40 for nonstudents. Classes began on January 13.

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.

Beginning Ballroom Team Class: Latin Dances
Winnett lounge, 9:30 p.m.—The beginning Latin classes concentrate on the technique for five dances: rumba, samba, cha-cha, jive, and paso doble. No partner is necessary. The cost is \$25 for Caltech students and \$40 for nonstudents. Classes began on January 13.

Friday, March 4

GSC Housing Committee Monthly Meeting
Broad Café, noon—The GSC Housing Committee meets monthly on the first Friday of the month at noon to discuss campus housing as it applies to graduate students. The committee works closely with the Caltech housing office.

Women’s Water Polo
at UC Santa Cruz, 4 p.m.

Caltech Glee Clubs Winter Concert
Dabney Lounge, 8 p.m.—This concert will feature the *Magnificat* of Andrea Gabrieli. Also included will be works by Brahms, Thompson, Victoria, and others. Admission is free.

Measure for Measure
Ramo Auditorium, 8 p.m.—Theater Arts at Caltech (TACIT) presents Shakespeare’s dark comedy. Performances are Fridays, Saturdays, and Sundays through March 5. (See Public Events contact information on this page.)

Michelin Distinguished Visitors Lecture
Beckman Auditorium, 8 to 9:30 p.m.—Best-known for his popular mysteries featuring private investigator Easy Rawlins, Walter Mosley transcends the conventional bounds of fiction writing. His is an active voice for the black community in the ongoing effort for racial equality. In his essays and nonfiction, he has examined ways that the African American perspective can contribute to political and social progress in the United States. In this lecture, Mosley will address the topic of “The Literary Life.” Admission is free; no tickets or reservations required.

Saturday, March 5

Women’s Water Polo
Hayward Tourney, at Hayward, 8 a.m.

Track and Field
Trinity Invitational, at San Antonio, Texas, 9 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.

A Woman’s Best Defense
Caltech Women’s Center, 1 to 5 p.m.—One in every three women in Los Angeles County will be assaulted in her lifetime. This is a frightening statistic, but each woman has the power to decrease her chances of becoming a victim of violent crime. This introductory workshop features skills for avoidance, deterrence, and resistance of physical and verbal assault. Registration: wcenter@studaff.caltech.edu.

Measure for Measure
Ramo Auditorium, 2 p.m.—Theater Arts at Caltech (TACIT) presents Shakespeare’s dark comedy. Performances are Fridays, Saturdays, and Sundays through March 5. (See Public Events contact information on this page.)

Caltech Folk Music Society Presents Vishten
Beckman Auditorium, 8 p.m.—Vishten’s music reflects the special joie de vivre unique to the Acadian culture of Eastern Canada. Visit the Folk Music Society at www.folkmusic.caltech.edu. (See Public Events contact information on this page.)

Sunday, March 6

Women’s Water Polo
Hayward Tourney, at Hayward, 8 a.m.

Women’s Tennis
vs. Vassar College, 1:30 p.m.

Baseball
vs. alumni, at Pasadena Polytechnic School, 2 p.m.

Men’s Tennis
at Chapman College, 2 p.m.

Skeptics Society Lecture
Baxter Lecture Hall, 2 p.m.—“When They Severed Earth from Sky: How the Human Mind Shapes Myth,” Elizabeth Barber, professor of linguistics and archaeology, Occidental College. Donation is \$8 for nonmembers and non-Caltech students. Free to the Caltech/JPL community. Tickets and information: 794-3119 or skepticism@aol.com. A book signing will follow the lecture.

Caltech-Occidental Symphony Orchestra
Ramo Auditorium, 7:30 p.m.—The program features Stravinsky’s *Firebird* Suite and the winner of this year’s concerto competition. A free reception for all will follow the performance. (See Public Events contact information on this page.)

Monday, March 7

Hustle Dance Class
Winnett lounge, 8 p.m.—This is the fourth and final class in a four-class hustle dance series. No partner is required, but some previous knowledge of hustle is helpful. Cost for Caltech students: \$6 per class. For nonstudents, \$8 per class.

Tuesday, March 8

Men’s Golf
at Whittier College, 12:30 p.m.

Amnesty International Letter Writing
Athenaeum Rathskeller, 7:30 p.m.—Caltech/Pasadena AI Group 22 will host an informal meeting to write letters on human-rights abuses around the world. All are welcome. Refreshments. Information: (818) 354-4461 or lkamp@lively.jpl.nasa.gov. Visit our website at www.its.caltech.edu/~aigp22.

Thursday, March 10

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, March 11

The Invisible Man: Special School-Day Performance
Beckman Auditorium, 10 a.m.—The Aquila Theatre Company presents this special one-hour production of *The Invisible Man* for school groups, grades 6 through 12. Information 395-6059. (A full-length production will be performed tonight at 8 p.m.; see the listing below.)

Track and Field
Women’s SCIAA Multi Dual Meet, at University of La Verne, 3 p.m.

The Invisible Man: Aquila Theatre Company
Beckman Auditorium, 8 p.m.—The Aquila Theatre Company will perform an adaptation of H. G. Wells’s *The Invisible Man*, which tells the story of an English scientist whose ability to render himself invisible proves more curse than blessing. (See Public Events contact information on this page.)

Saturday, March 12

Track and Field
Men’s SCIAA Multi Dual Meet, at Claremont-Mudd-Scripps, 9 a.m.

Wild Weather: Wind
Beckman Auditorium, 2 to 3:30 p.m.—*Wild Weather: Wind* explores the journey the winds take from their birth at the equator to the North Pole. A discussion will follow the screening. Suitable for ages 6 and older. (See Public Events contact information on this page.)

Sunday, March 13

Lagerstrom Chamber Music Concert
Dabney Lounge, 3:30 p.m.—The Primavera Trio will perform three works by the composer Rebecca Clarke (1886–1979) and one by Johannes Brahms. Admission is free.

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, 10 p.m.—Caltech Floorball Club holds pickup floorball games on Mondays from 10 p.m. to midnight. 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.

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.

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.

Lunchtime Pickup Ultimate Frisbee
See “Mondays,” above, for details.

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

Lunchtime Pickup Ultimate Frisbee
See “Mondays,” above, for details.

Caltech Tai Chi Club
Winnett lounge, 7 p.m.—Meets Tuesdays and Fridays weekly. Sessions are free. Information: 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.

Public Events information and tickets

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.

Women's Center, from page 2

have to have someone let you in and out. I felt like it was an imposition on others. I would prefer to have a room where you could go in and lock the door yourself." Since then, she has found an alternative location to pump, and still feeds her baby, Alexander, at lunchtime.

Candace Rypisi, director of the Women's Center, offered the use of the lounge, which users can reserve on a sign-up sheet. "We knew there were mothers out there who had been asking for it.

"I think for new mothers, whether or not they use the lactation room, having that space open to them helps create a perception of a workplace that cares about them and their needs. I like knowing the space is being used."

NuSTAR, from page 1

NuSTAR will be much better than the balloon experiment, says Caltech astrophysicist Fiona Harrison, NuSTAR's principal investigator, because it's necessary to get above Earth's atmosphere for extended periods to get a good view of the X-ray sky. NuSTAR will orbit Earth at an altitude of about 300 miles or so for at least three years. "With this mission, we'll open the hard X-ray frontier and look at things never seen before," says Harrison, who is also associate professor of physics and astronomy at Caltech.

NuSTAR has three basic science goals:

- The taking of a census of black holes at all scales. NuSTAR will not only count them, but will also measure the rate at which material has fallen into them over time, and the rate at which supermassive black holes have grown.
- The detecting and measuring of radioactive material in recently exploded stars. These remnants of supernovae will provide a better idea of how elements are formed in supernova explosions and then mixed in the interstellar medium (the space between stars).
- The observing and imaging of the highly energetic jets that stream out of certain black holes at nearly the speed of light.

NASA will give NuSTAR an up-or-down decision by next year for launch in 2009. The proposed telescope is part of the agency's Small Explorer Program (SMEX), which seeks out new technologies and proposals for space missions that can be launched at low cost.

Sally Ride, from page 1

activities that support girls' interest in science, math, and technology.

This is the third year the festival has taken place on the Caltech campus. This year, registration begins at 11:00 a.m. The festival runs from 11:00 a.m. to 4:15 p.m. The \$18 advance registration fee (\$25 the day of the event) includes full festival participation, souvenirs, and lunch. Girls attending the festival also can join the Sally Ride Science Club for a sponsored rate of \$5 for the first year.

Highlights will include:

- A keynote address by Ride describing her experiences in space;
- A "Sour Power" electrochemical engineering workshop;
- A biological science workshop called "CSI Los Angeles—A Science 'Who-Dun-It?'" that let's kids become a crime scene investigator for the afternoon;
- Hands-on, creative science, math, and technology-related workshops such as "Mystery of Booming Sand," and "A Tumble Through Time: How You Developed From a Single Cell," presented by Caltech faculty;
- A street fair with science demonstrations, entertainment, free stuff, a drawing for prizes, and the chance to meet the former astronaut.

For parents and teachers, the opportunity to participate in workshops on ways to support girls' interests in science and math;

Ride, a member of the Caltech Board of Trustees, became the first American woman to orbit Earth when she flew aboard the space shuttle *Challenger* in 1983. Her second flight was also aboard *Challenger* in 1984, and she was training for a third mission when the spaceship exploded shortly after liftoff in 1986.

Ride is the only person to serve on the accident investigation boards for both space shuttles *Columbia* and *Challenger*. Sally Ride Science was founded by her to support the large numbers of girls and young women who are, or might become, interested in science, math, and technology. The company organizes events, programs, and activities for girls that empower them, engage them, and encourage their interests. Besides the festivals, current programs include Sally Ride Science Camps, TOYchallenge, and the Sally Ride Science Club—a national club created to keep middle-school girls engaged in science adventures by connecting them to people, information, and attitudes that will nurture their relationship with science. For more information on Sally Ride Science programs, please visit: www.SallyRideScience.com, or call (800) 561-5161.

Spitzer, from page 1

Universe Revealed by the Spitzer Space Telescope," part of the Ernest C. Watson Lecture Series.

The Spitzer explores the heavens at infrared wavelengths, the heat radiation emitted by celestial objects. That allows astronomers to study the coldest, most distant, most hidden objects in the universe. Cool dim objects like small stars, brown dwarfs, and planets emit electromagnetic radiation most strongly in the infrared, the wavelengths of which are longer than those of visible light, and which can pass through the interstellar dust clouds that often shroud new stars. But Earth's atmosphere blocks infrared light. As a result, prospective infrared astronomers have had to turn to space.

Launched in August 2003, the Spitzer Space Telescope is the fourth of the NASA Great Observatories, a program that also includes the Hubble Space Telescope, Chandra X-ray Observatory, and Compton Gamma Ray Observatory. The Spitzer design incorporates major innovations in cryogenics, optics, and infrared detector arrays into an extremely efficient and cost-effective telescope that achieves a thousandfold increase in capability over previous infrared space observatories.

Werner has been working on the Spitzer since 1977 and has been Project Scientist since 1984. He is responsible for seeing that the mission's scientific objectives are clearly defined and that the telescope's scientific performance will achieve those objectives. In his talk, Werner will describe the technical and scientific principles that power the Spitzer, and display and explain the Spitzer's images and spectra (graphical representations of a celestial object's unique blend of light), and the revolutionary scientific results they have produced.

Caltech has offered the Watson Lecture Series since 1922, when it was conceived by the late Caltech physicist Earnest Watson as a way to explain science to the local community. Seating for this free public event in Beckman Auditorium on the Caltech campus is on a first-come, first-served basis, 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 (626) 395-4688 (voice) or (626) 395-3700 (TDD). All lectures will be available online at Caltech's Streaming Theater, <http://today.caltech.edu/theater>.



All aboard! Staff members board a bus at CIT² to head to Caltech.

Parking, from page 1

pristine parking spaces—is expected to open at the end of March, weather permitting.

As for the work on the temporary student housing, water and sewage lines need to be installed, as do data cables and electrical infrastructure. Lighting will be added or moved, and landscaping will begin. With the work scheduled to begin right after Presidents Day, the modular units are expected in April. "The rehab on the South Houses is anticipated to last 14 months," Henderson says, adding that it will begin at the end of Commencement.

Other measures have been taken to mitigate the loss of the parking lots. Of the 35 visitor spaces on the top level of the Holliston parking structure, 25 have been returned to the commuter pool.

Henderson reports that his office recently asked the city to alter the Pasadena ARTS bus route 10 so that it travels on Del Mar Boulevard, making it easier for Caltech commuters to catch the Metro Gold Line light-rail system.

"The new route began on the 20th," he says. "It's another method of getting people to work without bringing their cars."

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