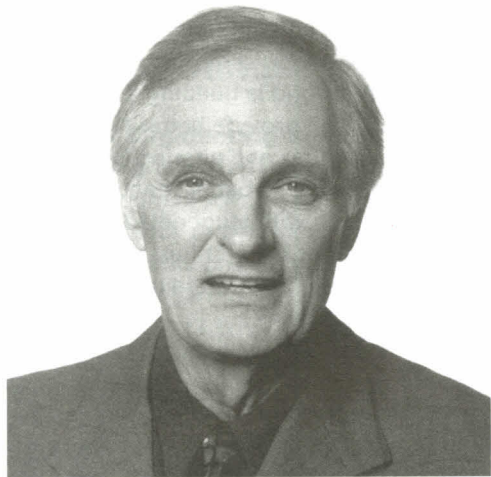


The campus community biweekly

January 10, 2002, vol. 2, no. 1



## Wyllie receives German geological award

Deborah Williams-Hedges

Peter Wyllie, professor of geology, emeritus, recently received the Leopold von Buch Medal, one of the highest scientific awards presented by the German Geological Society (DGG). This award, which was presented during the society's annual meeting in Kiel, Germany, is accompanied by honorary membership in the DGG.

The Leopold von Buch Medal is awarded annually, usually to a foreign scholar, in recognition of outstanding scientific contributions and for special services to the geological sciences. Wyllie received the medal "in recognition of his scientific research on the petrology of crystalline rocks, and also for his service in publicizing the importance of the geosciences for society."

Wyllie is an internationally known authority on the formation of igneous rocks—those created when molten material solidifies. His primary research covers experimental petrology of magmas and volatiles that erupt as lavas from volcanoes or form the granites of the Sierra Nevada.

see Wyllie, page 6

## Alda to be commencement speaker

The latest job that actor Alan Alda has accepted will be the role of commencement speaker at Caltech's 108th graduation ceremony, scheduled to take place in June.

Alda is known for his extensive body of work in the theater, film, and television, most notably on the long-running and hugely popular Korean War comedy series *M\*A\*S\*H*. In the show, he played Hawkeye Pierce, a talented and recalcitrant army surgeon with a chronic case of gallows humor.

Closer to home, Alda recently played the late Richard Feynman in the Broadway hit *QED*. His portrayal of the eccentric and ebullient physicist won glowing reviews from both theater critics and fans of the Nobel Prize winner.

*QED* came about mainly due to Alda, who gave momentum to the creation of the play after reading the books by Feynman as well as his biographies. As part of his research in preparation for the play's Los Angeles premiere, Alda visited Caltech to meet with Feynman's contemporaries, including Murray Gell-Mann and Helen Tuck, Feynman's former secretary.

Alda's natural curiosity and enthusiasm for science led him to the job as host of the award-winning television show *Scientific American Frontiers*. For the last eight years, he has accompanied researchers into the field as they've gathered data. He's also toured labs for behind-the-scenes glimpses of the latest research. The show has proven popular due to his hands-on approach and everyman's interest in the arcane; the audience gets the feeling that it is learning along with him.

Some of Alda's other film credits include roles in *Crimes and Misdemeanors*, *Everyone Says I Love You*, *Flirting with Disaster*, and *Manhattan Murder Mystery*. He has also written and directed episodes of *M\*A\*S\*H*. Nominated for 30 Emmy Awards, Alda has won five.

This year's commencement is scheduled for Friday, June 14, at 10 a.m. in Beckman Mall.

## Battle of the 'bots



Teammates Derek Jackson and Elisa Bueno (foreground) pit their robotic creations against those of Morgan Venable and Peter Meilstrup, as Professor Erik Antonsson presides from the background, in the annual Mechanical Engineering 72 design contest in December.

## New Year's floats run in his family

Although some may wonder what it's like to navigate one of the magnificent Rose Parade floats down Colorado Boulevard on New Year's morning, few at Caltech can tell you about it like Raul Turcios.

A lead man in Physical Plant's transportation department, he maneuvered FTD's "The Wonderland of Imagination" float down the street that morning like he's been doing it for years.

Turcios's relationship with the float industry began eight years ago, when the owners of Fiesta Parade Floats in Duarte called on him to provide scaffolding that allows workers to build, paint, and festoon the floats with flowers.

"When I first started, I asked them to let me drive," Turcios said. His chance to

see Floats, page 2

## Tech Today

**Your best online resource for today's events plus links to news and activities at Caltech is Tech Today. Connect to the campus calendar, divisions and departments, outside news sources, and more by visiting <http://atcaltech.caltech.edu/tech>. Let Tech Today bring it all together for you. Visit Tech Today, today!**

## Seeking diversity at Caltech

Rhonda Hillbery

*This article is excerpted from Caltech News, volume 35, issue 2/3. The full article can also be found online at <http://pr.caltech.edu/periodicals/CaltechNews/>.*

Twice as many black, Latino, and other underrepresented minority students entered graduate school at Caltech this fall compared to last year, thanks in part to better outreach efforts and new use of an online application service.

That's the good news, tempered by the small numbers involved: 20 incoming students, compared to just 10 in fall 2000. But this academic year does mark a new Caltech high, boosting underrepresented graduate students to 64, from 46 in 2000–2001. It also signals that initiatives designed to improve grad student diversity on campus may be starting to pay off.

Increasing diversity is a key mission for Rod Kiewiet, dean of graduate studies. "We did work real hard," he said. Efforts included sending representatives to historically black colleges and universities (HBCUs) and to academic conferences to meet prospective students; contacting students who had declined to come to Caltech as undergraduates; and encouraging students who have started the application process to complete it. Kiewiet also gives much credit to the 22 graduate

options and their faculty, who offered "visiting weekends" for prospective students, and to more competitive fellowship and assistantship offers.

see Diversity, page 6

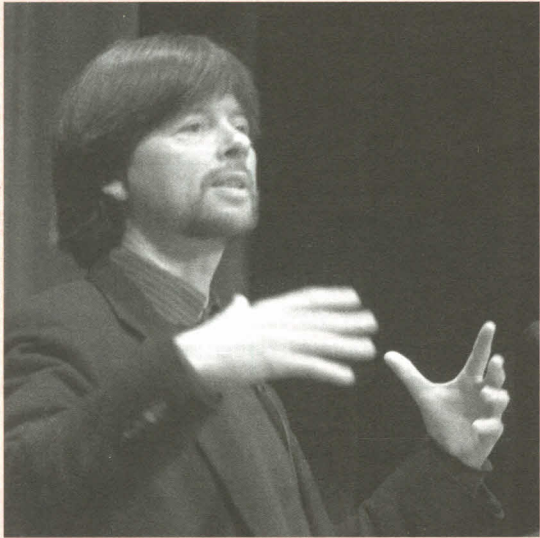
## New series to focus on diversity



Freeman Hrabowski III, president of the University of Maryland, Baltimore County, will give the inaugural lecture of the newly established Caltech Presidential Series on Achieving Diversity in Science, Math, and Engineering. The talk, which will take place on Tuesday, January 15, at 4 p.m. in Beckman Institute auditorium, is free and open to the public.

see Hrabowski, page 6

# NewsBriefs



Award-winning documentary maker and Michelin Distinguished Lecturer Ken Burns spoke on "The Great American Trilogy"—*Baseball, Jazz, and The Civil War*—to a full Beckman Auditorium on January 5.

## Honors and awards

**Harry Atwater** has been named Howard Hughes Professor, effective February 1. A member of Caltech's faculty since 1988, he received his PhD from MIT. He will retain his title of professor of applied physics and materials science.

**Andrew Lange**, Goldberger Professor of Physics, has been elected a fellow of the American Physical Society "for developing a new generation of bolometers that operate in the submillimeter and employing them to determine the geometry of the universe."

**Kip Thorne**, Feynman Professor of Theoretical Physics, received an honorary doctor of science in November from the University of Glasgow on the occasion of that school's 11th (550-year) jubilee. He also has been honored with several lectureships: the Arthur Holly Compton Memorial Lecture, Washington University in St. Louis, in February 2001; the Inaugural Herzberg Memorial Lecture, Canadian Association of Physicists, in June 2001; and the George Darwin Lecture, Royal Astronomical Society, in December 2000.

**Alexander Varshavsky**, Smits Professor of Cell Biology, has received the 2001 Louisa Gross Horwitz Prize for "breakthrough work on the ubiquitin system, the mechanism by which the cell maintains a proper and healthy balance of proteins." He shares the award with Avram Herskho, Distinguished Professor at the Technion—Israel Institute of Technology. Columbia University bestowed their awards December 11 at a ceremony and black-tie reception at the Low Library Rotunda on Columbia's Morningside campus.

## Personals

### New positions

**Gerald Wasserburg** became John D. MacArthur Professor of Geology and Geophysics, Emeritus, on October 1. He had joined the Caltech faculty in 1955 as an assistant professor of geology, after receiving his bachelor's, master's, and doctoral degrees from the University of Chicago. He was appointed professor of geology and geophysics in 1963 and MacArthur Professor in 1982, and he served as chair of the geological and planetary sciences division and as executive officer for geochemistry, from 1987 to 1989.

On November 1 **Fiona Harrison**, assistant professor of physics and astronomy, became associate professor of physics and astronomy. Also on November 1, several postdoctoral scholars joined Caltech: **Gabriela Alexandru** and **Jae Hyoung Cho** in biology, **Feng-Li Lian** in control and dynamical systems, **Ross Mabon** in chemistry, **Brian Shortt** in astrophysics research at the Jet Propulsion Laboratory, and **Yi-Chou Tsai** in chemistry.

Joining Caltech on November 6 was **Hirofumi Maeda**, a postdoctoral scholar in chemistry.

**Elizabeth Torres**, a postdoctoral scholar in biology, started on November 7.

Postdocs joining the Institute on November 12 were **Hector Arce** in astronomy, **Hiroshi Hashizume** in the ocean science element at the

Jet Propulsion Laboratory, **Damien Lemarchand** in geochemistry, and **Erica Thompson** in chemical engineering.

Starting on November 13 was **Pritsana Chomchan**, and on November 15, **Colm O'Tuathaigh**, both as postdoctoral scholars in biology.

On November 20 postdocs **Juliette Artru**, in geophysics, and **John Wyrick**, in biology, joined Caltech.

**Fred Anson** became Elizabeth W. Gilloon Professor of Chemistry, Emeritus, on January 2. He received his BS from Caltech in 1954 and his PhD from Harvard in 1957, returning to Caltech as an instructor that same year. He became an assistant professor in 1958 and was named full professor in 1968 and Gilloon Professor in 1995. He served as executive officer for chemistry from 1973 to 1977 and as chair of the chemistry and chemical engineering division from 1984 to 1994.

### Births

Derek Leon Mayo, the first child of Caltech professor **Steve Mayo** and his wife, Julie, was born at 1:51 a.m. on December 12, weighing in at 8 pounds 9.5 ounces. "Mom, Dad, baby, and cats are all doing fine." Mayo is associate professor of biology and chemistry and an associate investigator with the Howard Hughes Medical Institute.

### Retirements

**Tom Charng** retired on January 1. A system network administrator with the Infrared Processing and Analysis Center, he had worked at Caltech for 22 years.

## Corporate Relations honored

Caltech has received an Award of Excellence for Corporate and/or Foundation Relations from District VII of the Council for Advancement and Support of Education (CASE). The award is for *Forefronts*, which is published by Caltech's Office of Corporate Relations and highlights research in business and industry. Also, "Guidelines for Implementing a Corporate-University Relations Program," an article by **Kevin Doody**, director of corporate relations, has been published in the September–October issue of *Research Technology Management*.

## Program receives grant

The Cultural Expedition Program, a collaborative effort of Caltech's Office of Public Events and the Pasadena Unified School District, has been awarded a grant by the California Arts Council. Designed to increase audience participation among Pasadena-area underrepresented groups at Caltech performing-arts engagements, to explore different cultural traditions, to promote literacy, and to acquaint local high-school students with Caltech, the Cultural Expedition Program brought 810 high-school students to Caltech's campus for cultural events and workshops in 2000–01. The program has also received grants from the *Los Angeles Times* and Target.

# What can our new resources do for Caltech?

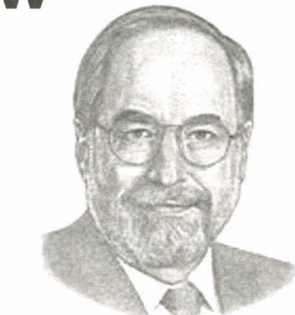
David Baltimore

Caltech has received the largest gift in the history of higher education, and not surprisingly the various constituents on the campus have been wondering how it will affect them. Although we do not have all of the answers, it seems a good idea to present our thinking thus far. By "our," I mean the administration's thinking, but it incorporates ideas from all over the campus gleaned in a four-year process of future-gazing. Establishing priorities involves difficult choices and changing perspectives, so this should be considered a status report of an ongoing process.

It is first important to recognize that the gift promised by Gordon and Betty Moore and the Moore Foundation was made as a lead gift for a campaign. This campaign will kick off in October 2002, and, being in the gestation stage, has not been formally announced. Over some five years, it will bring in significantly more than the already-impressive \$600 million Moore gift.

The core of Caltech is its research. Much of the activity of faculty, staff, and students focuses on research. Thus, it is appropriate that the largest impact of the Moore gift be on research. The \$600 million Moore gift includes \$300 million from the Gordon and Betty Moore Foundation to be given over 10 years, and much of that will be for equipment, materials, and people for innovative research proposals from across the campus. Structural chemistry, nanotechnology, cognitive science, and astronomy are all areas where we hope to provide support soon. The first application will go to the foundation in January. A good fraction of the Moores' personal gift of \$300 million, and we hope many of the campaign gifts, will go to increasing Caltech's endowment, a but-tress for all of our activities. Our new resources will also allow us to modernize our facilities for science and teaching through new building as well as extensive renovations. These will benefit all divisions. One research building we want to move ahead rapidly is an astrophysics building, for which we have a lead gift.

The other key part of Caltech's activities is education. We have not invested in



a major way in student housing and activities in the last few years, and we consider the campaign an opportunity to meet some student needs. Students have been asking for recognition of their concerns, and we have been listening. Two large projects are planned. One is a major renovation of student housing, which could even involve replacing the North Houses. A second is building a campus center that will provide better facilities for musical activities and altering Ramo Auditorium to make it a better theater venue. We are talking with students to consider other steps that the administration can take that would benefit the undergraduates more quickly.

Institutions are really about people, and the Moore gift should make it easier for us to continue to attract the best people. We get remarkable undergraduates—but we need to be certain that every student we want can afford to come to Caltech. Graduate students deserve a clear guarantee of support over their years at Caltech and should not be so dependent on research grants, especially in their first year. We benefit greatly from visitors, and will use some of the money to continue the program of Moore Visiting Scholars, funded up to now from yearly gifts by Dr. Moore. We do not plan to increase the size of our faculty more than marginally—we would rather concentrate our resources on the existing faculty. Thus resources to help faculty expand the directions of their research into new areas will be made available.

If the campaign is successful, it will be transformational over the next decade, providing Caltech with new facilities, new support for research activities, and a more stable financial base than it has enjoyed in decades. Not everything we want to do will be possible, but the Moore gift provides a strong foundation on which we will continue to build.

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### Floats, from page 1

drive didn't come up until after three years, a job he reported to be unexpectedly difficult.

Turcios's everyday working conditions are lavish compared to what he faced this New Year's morning. Tucked inside the float's hollow center, with only rudimentary controls and a steering wheel, he drove the length of the route completely blind.

"You can't see anything," he said. "You drive in this box, but you don't see where you're going, but you can see the floor. There's no speedometer. You just check the gauges, and the navigator tells you to touch right or touch left."

The theme for this year's float was borrowed from Lewis Carroll's *Alice's Adventures in Wonderland*, but it was far from a land of wonder for Turcios. He sat about 40 feet from the front end near the back tires, where he enjoyed the scent of fresh, ground road apples deposited by the horses on the route.

His brother-in-law, Steve Loveland, worked as Turcios's navigator. Positioned near the front of the float, he used a wireless system to direct Turcios to steer the float in a straight line and stop when necessary.

Float design, construction, and transportation has become something of a tradition in Turcios's family. Not only has his father-in-law, Darryl Loveland, decorated floats for more than 15 years, this year Turcios's wife, Cindy, and sister-in-law, Tammy, donned costumes to play the twins Tweedledum and Tweedledee and wave to the crowd.

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Raul R. Rodriguez's rendering (top) of the FTD Rose Parade entry, and Raul Turcios at the controls.

January 14–20, 2002

☞☞☞☞☞☞☞

Monday, January 14

**Chemical Engineering Seminar**  
106 Spalding Lab, Hartley Memorial Seminar Room, 4 p.m.—“Controlling Order in Diblock Copolymers through Substrate Interactions,” Rachel Segalman, chemical engineering, UC Santa Barbara. Refreshments, 113 Spalding Lab, 3:30 p.m. Information: [www.cheme.caltech.edu/seminars/seminars.html](http://www.cheme.caltech.edu/seminars/seminars.html).

**Computation and Neural Systems Seminar**  
24 Beckman Labs, 4 p.m.—“Control of Presynaptic Function,” Timothy Ryan, associate professor, department of biochemistry, Weill Medical College of Cornell.

**Geology and Planetary Sciences Seminar**  
155 Arms, Robert Sharp Lecture Hall, 4 p.m.—“Sea Level Fluctuations: The Heartbeat of Sediment Deposition,” Gregor Eberli, chairman and professor, marine geology and geophysics, University of Miami. Information: [www.gps.caltech.edu](http://www.gps.caltech.edu).

**Applied and Computational Mathematics Colloquium**  
101 Guggenheim Laboratory, Lees-Kubota Lecture Hall, 4:15 p.m.—“Truncated Data with Applications to Astronomy,” Bradley Efron, professor of statistics, Stanford University. Refreshments, 3:45 p.m.

Tuesday, January 15

**Caltech Library System Presents: Web of Science for Science and Engineering**  
Sherman Fairchild Library, multimedia conference room, noon to 1:30 p.m.—Learn tips and tricks for searching Web of Science databases. Reservations: <http://library.caltech.edu/learning/form.htm>. Not open to the public.

**Caltech Lecture Series on Achieving Diversity in Science, Math, and Engineering**  
Beckman Institute auditorium, 4 to 5:30 p.m.—“Best Practices: Producing High-Achieving Minority Students in Science, Mathematics, and Engineering,” Freeman A. Hrabowski III, president, University of Maryland, Baltimore County. 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).

**Chemical Physics Seminar**  
147 Noyes, Sturdivant Lecture Hall, 4 p.m.—“Photoelectron Spectroscopy: Cluster Anions,” Kit Bowen, professor of chemistry, Johns Hopkins University.

**Caltech/MIT Enterprise Forum**  
Registration and dinner: Chandler Dining Hall, 5:30 p.m.; lecture: Baxter Lecture Hall, 7 to 9 p.m.—“Software Venture Strategies: The Peril of Platform Technology.” In this session, the forum will look at the peril of platform technology and provide entrepreneurs with perspectives for choosing between platform and application-focused strategies. Fee: \$35; \$10 for non-Caltech students with valid ID; Caltech students, faculty, and staff free. Registration and information: 395-3916, [entfor@caltech.edu](mailto:entfor@caltech.edu), or [www.entforum.caltech.edu](http://www.entforum.caltech.edu).

Wednesday, January 16

**Mathematical Physics Seminar**  
351 Sloan, noon—“Multidimensional Gordon Criteria,” David Damanik, Fairchild Postdoctoral Scholar, Caltech. Information: [www.math.caltech.edu/events/mathphys.html](http://www.math.caltech.edu/events/mathphys.html).

**Molecular Mechanisms of Disease**  
24 Beckman Labs, 2 p.m.—“IGFBPs in Cancer,” Professor Pinchas Cohen, department of pediatrics and endocrinology, UCLA.

**Bioengineering Seminar**  
101 Guggenheim Laboratory, Lees-Kubota Lecture Hall, 3 p.m.—“Unexpected Dynamical Complexity of Biomolecular Bonds,” Professor Evan Evans, physics and pathology, University of British Columbia. Refreshments, 2:30 p.m. Information: [www.be.caltech.edu/seminars.html](http://www.be.caltech.edu/seminars.html).

**Astronomy Colloquium: Fourth Annual Greenstein Lecture**  
155 Arms, Robert Sharp Lecture Hall, 4 p.m.—“20-20 Vision: New Telescopes for the 21st Century,” Roger Angel, Regents Professor, department of astronomy, University of Arizona. Information: <http://astro.caltech.edu/~jlc/colloquia.html>.

**Chemical Engineering Seminar**  
106 Spalding Lab, Hartley Memorial Seminar Room, 4 p.m.—Topic to be announced. Abraham Stroock, department of chemistry and chemical biology, Harvard University. Refreshments, 113 Spalding Lab, 3:30 p.m. Information: [www.cheme.caltech.edu/seminars/seminars.html](http://www.cheme.caltech.edu/seminars/seminars.html).

**Organic Chemistry Seminar**  
147 Noyes, Sturdivant Lecture Hall, 4 p.m.—“Strained Rings and Tandem Reactions in Organic Synthesis,” James L. Leighton, associate professor, department of chemistry, Columbia University.

Thursday, January 17

**Chemical Engineering Seminar**  
106 Spalding Lab, Hartley Memorial Seminar Room, 4 p.m.—“Early Stages of Nucleation in Binary Polymer Blends,” Professor Nitash P. Balsara, chemical engineering, University of California, Berkeley. Refreshments, 113 Spalding Lab, 3:30 p.m. Information: [www.cheme.caltech.edu/seminars/seminars.html](http://www.cheme.caltech.edu/seminars/seminars.html).

**Geoclub Seminar**  
151 Arms, Buwalda Room, 4 p.m.—Topic to be announced. Mihai Ducea, assistant professor of geology, University of Arizona. Refreshments, 3:45 p.m. Information: [www.gps.caltech.edu/seminars/geoclub/](http://www.gps.caltech.edu/seminars/geoclub/).

**Physics Research Conference**  
201 E. Bridge, 4 p.m.—“Probing Dark Matter and Dark Energy with Gravitational Lensing,” Anthony Tyson, Bell Laboratories, Lucent Technologies. Refreshments, 108 E. Bridge, 3:45 p.m. Information: [www.pma.caltech.edu/~physcoll/PhysColl.html](http://www.pma.caltech.edu/~physcoll/PhysColl.html).

Friday, January 18

**Caltech Library System Presents: Market Research**  
Sherman Fairchild Library, multimedia conference room, noon—Gain a basic overview of market research. The session is approximately one hour of formal instruction, immediately followed by optional hands-on practice. Registration: <http://library.caltech.edu/learning/form.htm>. Not open to the public.

**Thesis Seminar**  
24 Beckman Labs, 2 p.m.—“Stability and Conformational Specificity in Protein Design: Models for Binary Patterning and Electrostatics,” Shannon Marshall, graduate student in chemistry, Caltech.

**Fluid Mechanics Seminar**  
101 Guggenheim Laboratory, Lees-Kubota Lecture Hall, 3 p.m.—“Electroosmotic Flow and Zone Broadening in Microfluidic Channels of Variable Cross-Section and Wall Charge,” Professor Sandip Ghosal, department of mechanical engineering, Northwestern University. Information: [www.galcit.caltech.edu/Seminars/Fluids/CurrentFluids/index.html](http://www.galcit.caltech.edu/Seminars/Fluids/CurrentFluids/index.html).

**Kellogg Seminar**  
Lauritsen Library, 4 p.m.—“Chiral Corrections to Nucleon and Nuclear Parton Distributions,” Jiunn-Wei Chen, research associate, department of physics, University of Maryland, College Park.

Memorial set for Glen Cass

**A celebration of the life and career of Glen Cass, Caltech professor of environmental engineering and mechanical engineering, will be held on Monday, January 14, in Dabney Lounge at 3 p.m. Cass passed away from cancer on July 30 at age 54.**  
**An expert on air pollution, Cass earned his PhD at Caltech in 1978 and was a member of the Institute’s faculty for 23 years. In 2000, he joined the Georgia Institute of Technology to chair its School of Earth and Atmospheric Sciences. He is survived by his wife, Jeanie; son, Rob; mother, Marie; and sister, Norine.**  
**The Caltech community is invited to attend the memorial. Questions can be directed to John Seinfeld at [seinfeld@caltech.edu](mailto:seinfeld@caltech.edu).**  
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# January 21–27, 2002

M T W T F S S

## Monday, January 21

**Martin Luther King Day holiday**

### Computation and Neural Systems Seminar

24 Beckman Labs, 4 p.m.—Topic to be announced. Jennifer Linden, postdoctoral fellow, Keck Center for Integrative Neuroscience, UC San Francisco.

## Tuesday, January 22

### Institute for Quantum Information

74 Jorgensen, 3 to 4:30 p.m.—“Distillability and Bell Inequalities in N Qubit Systems,” Antonio Acin, senior researcher, department of physics, University of Geneva.

### Ulric B. and Evelyn L. Bray Seminar

25 Baxter, 4 p.m.—“Banking and Markets,” Franklin Allen, Nippon Life Professor of Finance and professor of economics, the Wharton School, University of Pennsylvania. Refreshments.

### General Biology Seminar

119 Kerckhoff, 4 p.m.—“Aging Mutants in *C. elegans* Reveal Trade-offs between Life Extension and Reduced Fitness; Are There Human Applications?”, Professor Thomas Johnson, Institute for Behavioral Genetics, University of Colorado at Boulder.

### USGS Public Lecture Series

Baxter Lecture Hall, 8 p.m.—“What Is Down There Causing the Earthquakes in the Los Angeles Region?”, Gary Fuis, USGS Menlo Park. Information: <http://pasadena.wr.usgs.gov/info/lectures/>.

## Wednesday, January 23

### Mathematical Physics Seminar

351 Sloan, noon—“Random Schrödinger Operators with Pure Point Spectrum and Diffusive Transport,” Gunter Stolz, University of Alabama, Birmingham. Information: [www.math.caltech.edu/events/mathphys.html](http://www.math.caltech.edu/events/mathphys.html).

### Astronomy Colloquium

155 Arms, Robert Sharp Lecture Hall, 4 p.m.—Topic to be announced. Marten van Kerkwijk, Utrecht University, the Netherlands. Information: <http://astro.caltech.edu/~jlc/colloquia.html>.

### Bioorganic/Bioinorganic Special Seminar

147 Noyes, Sturdivant Lecture Hall, 4 p.m.—“New Molecular Lessons to Be Learned from Et 743, a Marine Natural Product with Clinical Efficacy,” Laurence H. Hurley, professor of medicinal chemistry, University of Arizona.

### Chemical Engineering/Materials Research Seminar

106 Spalding Lab, Hartley Memorial Seminar Room, 4 p.m.—“Organic Materials for Plastic and Molecular Electronics,” Zhenan Bao, Bell Laboratories, Lucent Technologies. Refreshments, 113 Spalding Lab, 3:30 p.m. Information: [www.cheme.caltech.edu/seminars/seminars.html](http://www.cheme.caltech.edu/seminars/seminars.html).

### Wiersma Lecture

24 Beckman Labs, 4 p.m.—Topic to be announced. Martin Raff, MRC Laboratory for Molecular Cell Biology and Cell Biology Unit, University College, London.

### Earnest C. Watson Lecture Series

Beckman Auditorium, 8 p.m.—“Robotics: Moving Beyond the Factory Floor,” Joel Burdick, professor of mechanical engineering and bioengineering, Caltech. 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, January 24

### General Biology Seminar

119 Kerckhoff, 4 p.m.—Topic to be announced. Justin Kumar, department of cell biology, Emory University School of Medicine.

### Geoclub Seminar

151 Arms, Buwalda Room, 4 p.m.—Topic to be announced. Edward DeLong, science department chair, Monterey Bay Aquarium Research Institute. Refreshments, 3:45 p.m. Information: [www.gps.caltech.edu/seminars/geoclub/](http://www.gps.caltech.edu/seminars/geoclub/).

### Physics Research Conference

201 E. Bridge, 4 p.m.—“Origin and Evolution of Extrasolar Planetary Systems,” Peter Goldreich, DuBridge Professor of Astrophysics and Planetary Physics, Caltech. Refreshments, 108 E. Bridge, 3:45 p.m. Information: [www.pma.caltech.edu/~physcoll/PhysColl.html](http://www.pma.caltech.edu/~physcoll/PhysColl.html).

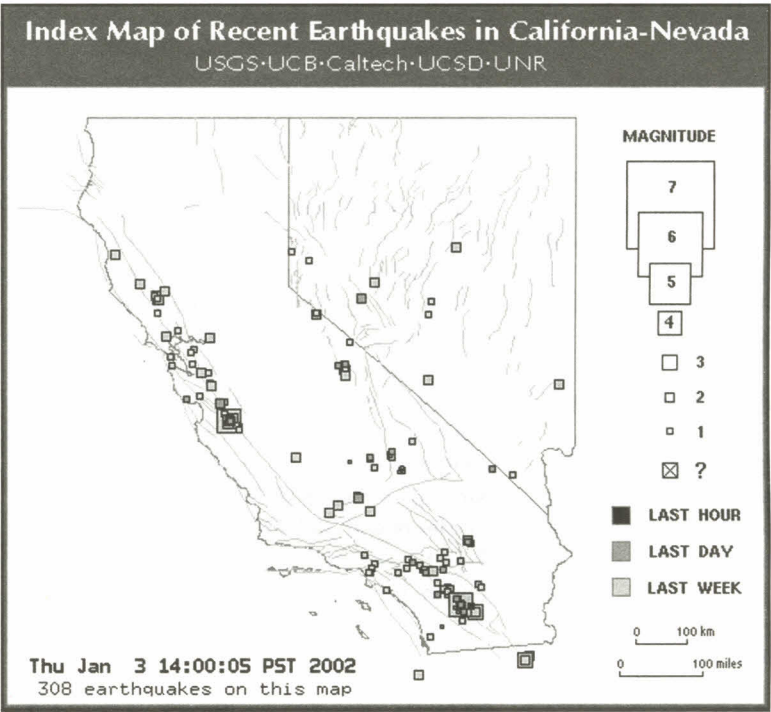
## Friday, January 25

### Fluid Mechanics Seminar

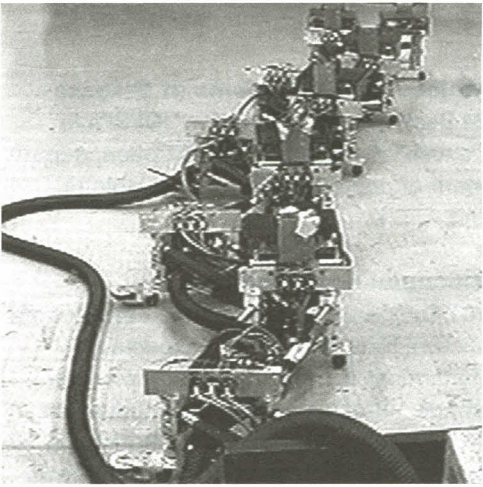
101 Guggenheim Laboratory, Lees-Kubota Lecture Hall, 3 p.m.—“Modification of the Turbulent Burning Velocity by Gas Expansion,” Professor Norbert Peters, department of mechanical engineering, Stanford University. Information: [www.galcit.caltech.edu/Seminars/Fluids/CurrentFluids/index.html](http://www.galcit.caltech.edu/Seminars/Fluids/CurrentFluids/index.html).

### Inorganic-Organometallics Seminar

151 Crellin, 4 p.m.—“Progress Towards Palladium(II) Catalyzed Alkane Oxidation by Dioxygen,” Lily Ackerman, graduate student in chemistry, Caltech.



This graphic from the United States Geological Survey Recent Earthquake system combines data from the Northern and Southern California and Nevada seismograph networks for the latest earthquake activity. Earthquakes in the Los Angeles region will be the topic of the USGS Public Lecture Series at the Baxter Lecture Hall on Tuesday, January 22, at 8 p.m.



"Snakey" is a hyper-redundant robot—with a structure and operation similar to that of snakes and elephant trunks—in the robotics lab of Caltech's department of mechanical engineering. Robotics will be the subject of a Watson Lecture by Joel Burdick, professor of mechanical engineering and bioengineering, on January 23.

# CampusEvents

## Monday, January 14

**Ballroom Dance Club**  
Winnett lounge, 7:30 p.m.—Viennese waltz for beginners, professionally taught. This is the second of a five-week series on Monday evenings. If you missed the first class, come anyway; the material will be reviewed. No partner is required. Fee: \$6 a lesson for Caltech students; \$8 a lesson for others. Refreshments and a half-hour practice period will follow each class.

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

## Tuesday, January 15

**Caltech/MIT Enterprise Forum**  
Registration and dinner: Chandler Dining Hall, 5:30 p.m.; lecture: Baxter Lecture Hall, 7 to 9 p.m.—“Software Venture Strategies: The Peril of Platform Technology.” In this session, the forum will look at the peril of platform technology and provide entrepreneurs with perspectives for choosing between platform and application-focused strategies. Fee: \$35; \$10 for non-Caltech students with valid ID; Caltech students, faculty, and staff free. Registration and information: 395-3916, entfor@caltech.edu, or www.entforum.caltech.edu.

**Caltech Folk-Dancing Club**  
Dabney Lounge, 7:30 p.m. to midnight—Drop-ins are welcome. Donations accepted.

**The Caltech Tai Chi Club**  
Winnett lounge, 7:30 p.m.—Meets Tuesdays and Fridays weekly. Sessions are free. Information: www.its.caltech.edu/~taichi/.

**Women’s Basketball**  
at Cal Lutheran University, 7:30 p.m.

## Wednesday, January 16

**Ballroom Dance Club**  
Winnett lounge, 7:30 p.m.—American rumba for beginners, amateur-taught. This is the second of a five-week series running on Wednesday evenings. If you missed the first class, come anyway; the material will be reviewed. No partner is required. Fee: \$1 a lesson; free for freshmen or those getting PE credit. Refreshments and a half-hour practice period will follow each class.

**Men’s Basketball**  
vs. Cal Lutheran University, 7:30 p.m.

## Friday, January 18

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

**Falun Gong Workshop**  
Winnett clubroom 1, 7:30 p.m.—Through video documentaries and discussion, learn about what Falun Gong is and why it is persecuted in China. Information: www.its.caltech.edu/~falun.

**Women’s Basketball**  
vs. Whittier College, 7:30 p.m.

**Hal Holbrook In Mark Twain Tonight!**  
Beckman Auditorium, 8 p.m.—Actor Hal Holbrook in his famed three-act, one-man show. Tickets and information: 395-4652, 1 (888) 2CALTECH, or events@caltech.edu. Individuals with a disability: 395-4688 (voice) or 395-3700 (TDD). Visit Public Events at www.events.caltech.edu.

## Saturday, January 19

**Swimming and Diving**  
vs. Whittier College, 11 a.m.

**Caltech Y Community Service—Union Station**  
6 to 9 p.m.—Volunteers will help prepare and serve meals for homeless men, women, and children at the Union Station shelter in Pasadena. Information: 395-6163, gregf@caltech.edu, or www.caltechy.org.

**Men’s Basketball**  
at Occidental College, 7:30 p.m.

**Caltech Jazz Band Concert**  
Beckman Auditorium, 8 p.m.—The music of Clifford Brown, Thelonius Monk, Les Deutsch, and others, in a free concert performed by Caltech’s two big bands, under the direction of William Bing.

## Sunday, January 20

**Paco A. Lagerstrom Chamber Music Concert**  
Beckman Auditorium, 3:30 p.m.—The Jefferson Chamber Players will perform works from Thomas Jefferson’s music library at Monticello, including pieces by Haydn, Vivaldi, Purcell, Boccherini, and others. Tickets and information: 395-4652, (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.

**Amnesty International Book Discussion Group**  
Vroman’s Museum Collection, 340 S. Lake Avenue, Pasadena, 6:30 p.m.—This month’s book is *Unexpected Light: Travels in Afghanistan*, by Jason Elliot. It is not necessary to have read the book to attend.

## Monday, January 21

**Martin Luther King Day holiday**  
**Ballroom Dance Club**  
Winnett lounge, 7:30 p.m.—Viennese waltz for beginners, professionally taught. This is the third of a five-week series on Monday evenings. No partner is required. Fee: \$6 a lesson for Caltech students; \$8 a lesson for others. Refreshments and a half-hour practice period will follow each class.

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

## Tuesday, January 22

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

**The Caltech Tai Chi Club**  
Winnett lounge, 7:30 p.m.—Meets Tuesdays and Fridays weekly. Sessions are free. Information: www.its.caltech.edu/~taichi/.

**Women’s Basketball**  
at Occidental College, 7:30 p.m.

## Wednesday, January 23

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

**Men’s Basketball**  
at University of Redlands, 7:30 p.m.

## Thursday, January 24

**Digital Media Center Presents “Hands-On Scanning Workshop”**  
New Media Classroom, 363 S. Hill Avenue, 10 a.m. to noon—Learn solid techniques for accurate scanning. Basic image enhancement techniques with Adobe Photoshop will also be covered. (The Digital Media Center is in the building behind the Einstein Papers house.) Registration: 395-3420 or dmc@caltech.edu. Information: http://twing.caltech.edu/workshops. Not open to the public.

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

## Friday, January 25

**Swimming and Diving**  
at Pomona-Pitzer College, 3 p.m.

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

**Women’s Basketball**  
vs. Claremont-Mudd-Scripps, 7:30 p.m.

**Armchair Adventure Series**  
Beckman Auditorium, 8 p.m.—“Exploring Costa Rica: Colors, Creatures, and Curiosities,” narrated by Sandy Mortimer. Tickets and information: 395-4652, 1 (888) 2CALTECH, or events@caltech.edu. Individuals with a disability: 395-4688 (voice) or 395-3700 (TDD). Visit Public Events at www.events.caltech.edu.

## Saturday, January 26

**Track and Field**  
Citrus College All Comers, at Citrus College, 9 a.m.

**Baseball**  
Dodgertown West, doubleheader, 11 a.m.

**Swimming and Diving**  
vs. Occidental College, 11 a.m.

**Men’s Basketball**  
vs. Whittier College, 7:30 p.m.

**Winter Chamber Music Concert**  
Dabney Lounge, 8 p.m.—Caltech students will perform a variety of music for small ensembles, with a different program presented for each free concert in this series. A reception will follow the performance.

**Richie Havens and Livingston Taylor**  
Beckman Auditorium, 8 p.m.—The singing style of Richie Havens has remained unique and ageless since he first emerged from the Greenwich Village folk scene in the early ‘60s. Livingston Taylor is blessed with a honey-coated tenor that can be both comforting and compelling. Tickets and information: 395-4652, 1 (888) 2CALTECH, or events@caltech.edu. Individuals with a disability: 395-4688 (voice) or 395-3700 (TDD). Visit Public Events at www.events.caltech.edu.

## Sunday, January 27

**Winter Chamber Music Concert**  
Dabney Lounge, 3:30 p.m.—Caltech students will perform a variety of music for small ensembles, with a different program presented for each free concert in this series. A reception will follow the performance.

## Hot jazz, cool chamber music

The Caltech Jazz Bands promise to raise the temperature a few degrees as they present their annual winter concert on Saturday, January 19, at 8 p.m. in Beckman Auditorium. Directed by William Bing, the student musicians will play favorites from the swing era to the present, including numbers by Paul Lopez, Clifford Brown, J. J. Johnson, Neal Hefti, Les Deutsch, and others. The public is invited to enjoy the free concert, which Bing says attracts more than 500 people each year. No tickets or reservations are needed for the event, which includes a post-concert reception.

In addition to appearing at numerous Institute functions and concerts, the Caltech Jazz Bands—the Swing Band and Concert Band—have played in competitions, done recording sessions, and performed for standing-room-only crowds at the Baked Potato, a former local jazz club. They have recorded two CDs, *Exothermic Jazz* (1998) and *Crowd Pleasers* (2001), which are available at the Caltech Bookstore and several local record stores.

Jazz Bands director Bing has been teaching at Caltech since 1971, and also conducts the Caltech-Occidental Concert Band, comprising musicians from the students, faculty, staff, and alumni of Caltech and Occidental College, and from JPL and the local community. Bing’s name is written all over the Los Angeles music scene—besides teaching trumpet in the area, he’s played with everyone from the L. A. Chamber Orchestra to Henry Mancini, and everywhere from the Hollywood Bowl to the Music Center, as well as on movie soundtracks, television, and commercials. He and his wife, Delores Bing, director of Caltech’s chamber music program, were the recipients of the Associated Students of Caltech’s 16th annual Excellence in Teaching Award.

Also beginning this month, Delores Bing will direct Caltech’s annual winter chamber music concert series. The musicians, who include students, grad students, and a smattering of staff, faculty, and JPL personnel, will perform a variety of classical music for small ensembles, with different programs presented for each concert. The free public performances will be followed by receptions and will take place on January 26 and 27, February 1, and February 3—the annual Super Bowl Alternative Concert.

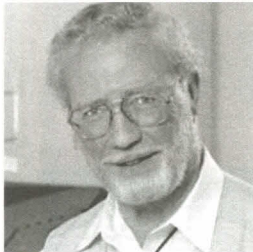
Bing has directed Caltech’s chamber music program since its founding in 1979, and has organized and coached more than 500 small ensembles of Caltech students. A cellist who studied at Drake University and the University of Southern California, she has been as much a part of Los Angeles music as her husband. Bing has performed as a guest member of the Los Angeles Philharmonic and the Los Angeles Chamber Orchestra, as well as with the Los Angeles Opera Orchestra and numerous other ensembles. In addition, she has played on more than 100 motion picture and television soundtracks, including *Close Encounters of the Third Kind*, *Star Trek*, *The Shawshank Redemption*, and *The X-Files*.

Other upcoming student music events include the Pacific Southwest Intercollegiate Festival on Saturday, March 2, at Biola College in La Mirada; the Glee Clubs’ annual Winter Concert on March 8 and 9; and the Caltech-Occidental Symphony Orchestra on March 10. For more information, visit www.events.caltech.edu/events.shtml.



Folk musician Richie Havens will perform at Beckman Auditorium on Saturday, January 26, at 8 p.m.

Wyllie, from page 1



Peter Wyllie

Throughout his career, Wyllie has been a “global ambassador” for the geosciences. He served as chairman of the U.S. National Academy committee that published, in 1993, the first national survey of Earth sciences, *Solid-Earth Sciences and Society*. Wyllie has given numerous international lectures on the impact of earth sciences on society, including such subjects as resources (oil, minerals, and water supply), hazards (earthquakes, volcanic eruptions, and landslides), and global climatic change. He has been elected fellow or foreign member of national science academies in the United States, the United Kingdom (the Royal Society), Russia, China, and India (Delhi and Allahabad), and of Academia Europaea.

A former president of the Mineralogical Society of America, the International Mineralogical Association, and the International Union of Geodesy and Geophysics, Wyllie has received numerous honors throughout his career, including the Mineralogical Society of America’s 2001 Roebling Medal, the Geological Society of London’s Wollaston Medal, and the German Mineralogical Society’s Abraham Gottlob Werner Medal.

Wyllie joined Caltech in 1983 as a professor in and chair of the Division of Geological and Planetary Sciences. In 1987, he returned to teaching and research, then was appointed division academic officer in 1994. He served in this capacity until his retirement in 1999.

Diversity, from page 1

Despite signs of progress, Caltech isn’t claiming bragging rights in the complex effort to bring more underrepresented minorities to campus. The still-low numbers reflect the challenges facing higher education, especially in math, science, and engineering. And some factors in Caltech’s modest improvement remain unknown. “Even though we engaged in a lot of outreach efforts, a large majority of underrepresented minority applications came in from people we had never contacted,” Kiewiet acknowledges.

This year more than half of the graduate applications came in through Embark, an online application service used by Caltech for the first time. According to one of the firm’s surveys, some 92 percent of prospective grad students used the Internet to research or apply to programs. “It may have opened up a new pool of applicants,” Kiewiet says, adding that the online application process saves both money and time.

Once applicants are evaluated, Caltech is competing with other top schools for the same pool of underrepresented minority students. With the exemplary test scores, high grades, and glowing letters of recommendation required for admission, these students can often pick and choose among colleges. This year the Institute received 105 graduate applications from underrepresented minorities, up from 84 last year. Of the 31 students offered admission, 20 accepted (14 of them Hispanic, four African American, and two Native American).

That too few minorities enter engineering and science college programs is underscored by the work world. Statistics show that underrepresented minorities account for 23 percent of the U.S. population but only 6 percent of the engineering and technology workforce. Says Caltech president David Baltimore, “I have emphasized diversity as a goal both because its realization will increase the pool of talent from which Caltech can draw and because it will make the atmosphere on the campus a more realistic model of the world outside. Moreover, I personally feel that achieving diversity is the moral responsibility of a university in contemporary America.”

Backing up the good intentions with action are faculty and administrators, such as Miriam Feldblum, special assistant to the president, who has developed relationships with HBCUs, including Atlanta’s Morehouse College. Caltech also is joining other colleges and universities in alliances such as EMERGE (Empowering Minority Engineers to Reach for Graduate Education) to help forge a na-

tional partnership committed to increasing minority graduates in science, engineering, and mathematics.

Perceptions can be tough to change, among them that Caltech is insular, Kiewiet says. “Here in the middle of L.A., an amalgam of different groups, we have a little institution that seems impervious to the rest of the goings-on in the world.” This is the case despite the fact that Caltech is very diverse in a global sense—out of 252 incoming graduate students this fall, almost half are international.

Efforts also have been marked by a new cohesion since Baltimore became president in 1998. “In the past there were some really strong individual efforts,” says Sue Borrego, director and associate dean of the Office for Minority Student Affairs (MSA). “But they were piecemeal. Now . . . we really are working as an institution to collaborate more and to build more crossover between graduate and undergraduate affairs.”

At Caltech, where the small student population and often solitary nature of hitting the books can breed isolation, the MSA can play an important role by supporting students and by raising awareness of diversity on campus. Brandi Jones, assistant director, describes how MSA offers students social, academic, and other services, and supports groups like the Caltech National Society of Black Engineers and Club Latino. “We’re trying to reach out and let grad students know we’re here,” she says. “The key is fostering communication.”

Other efforts include the newly formed President’s Office Diversity Initiative Fund; the current \$2.2 million Irvine Foundation grant, which helps fund areas including graduate fellowships, outreach programs, and campus multicultural activities; and Caltech’s Minority Undergraduate Research Fellowships (MURFs), which bring talented undergrads to campus for a summer of research and can also plant seeds for their future return to campus.

As Caltech moves forward, the graduate school office will assess which recruitment methods have succeeded and which have not. “I’m not going to choose to believe our goal is insurmountable,” Kiewiet says. “That leads to defeatism.”

In the end, he suggests, the Institute’s reputation as a hotbed of science and engineering knowledge must be the most compelling draw of all. “This is a science and engineering school first and foremost, and the defining culture of Caltech is science and engineering in a foremost and fundamental way. What a great thing to pursue.”

Hrabowski, from page 1

Hrabowski is considered a national authority on nurturing mathematics and science excellence among African American men. His lecture, “Best Practices: Producing High-Achieving Minority Students in Science, Mathematics, and Engineering,” will be based on his years of research delving into the question of why so few minority students and faculty, particularly African Americans, are in these fields at major U.S. colleges and universities.

As vice provost at UMBC, a predominantly white research university, Hrabowski started the Meyerhoff Scholars program in 1988 to recruit and train high-achieving African American students as scientists, engineers, and mathematicians. The program has had striking results. More than 400 students have enrolled in the competitive program; since the first group of graduates in 1993, more than 265 Meyerhoff students have earned degrees, with 85 percent going on to graduate and professional programs. Research on the program’s effectiveness has shown that students’ decisions to select science, math, or engineering as a major and possible career are directly related to the quality and nature of their research experiences and mentoring relationships.

A native of Birmingham, Alabama, Hrabowski graduated from Hampton Institute in Virginia at age 19 and earned a doctorate from the University of Illinois five years later. He served for 10 years as a professor, dean, and vice president at Coppin State College in Maryland before coming to UMBC, where he has been president since 1993. He is the coauthor of *Beating the Odds: Raising Academically Successful African American Males* (1998) and *Overcoming the Odds: Raising Academically Successful African American Young Women* (2001).

The Caltech Presidential Series on Achieving Diversity in Science, Math, and Engineering was established to bring to campus speakers who have had successful experiences in promoting women and underrepresented minorities in science and technology. The next speaker in the series will be Sheila Widnall, Mauze Professor of Aeronautics and Astronautics at MIT, on April 16.

The lecture series is sponsored by the President’s Office. For more information on the lecture, contact Caltech Public Events at (626) 395-4652 or [events@caltech.edu](mailto:events@caltech.edu). For more information on diversity initiatives at Caltech, visit <http://diversity.caltech.edu/>.

## Holiday Apollo



The usually somber Greek god sported some seasonal cheer in December as he continued his reign over the Braun Gym lobby.

# Caltech336

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