



The California Tech

VOLUME CV, NUMBER 28

PASADENA, CALIFORNIA

MAY 24, 2004



L. Tran/The California Tech

A group of Darbs dressed as Luigi, Mario's trusty sidekick and brother, pause for a moment during their search for clues as part of their stack for senior Ditch Day.

Underclassmen Begin Ditch Day Fun with Seniors' Wake Up Call

By CHRISTINE CHANG

Underclassmen awoke to the insistent banging of excited seniors as they raced down the halls yelling, "Ditch Day!" Congregating in the courtyard, the underclassmen examined the posted stacks while hungrily consuming donuts. At the time came, they raced to sign up for stacks and ripped open the envelope containing the first clue. Then, they separated into their respective groups for an exhilarating day of chasing after clues and performing bizarre activities which the seniors had concocted.

"It was like being part of some freak circus treasure hunt with some games in between. Every stack had an unique theme which required people to dress and act accordingly," said freshman Chris Yu.

Yu, along with freshmen Tom Tsai, Tony Falk, Neha Das, Jane Wang, Lisa Streit and juniors Neil Tiwari, Kevin Bartz, Beth Dorman and Bill Young participated in a stack prepared by seniors Anita Choi and Kamilee Christiansen based on the movie *Gattaca*. In this stack, the group was divided into two teams called the

invalids and the valids.

They trekked across campus in order to find and solve clues, such as one which was coded as a codon sequence, which informed them as to the location of the next clue. Dispersed throughout the day were a series of physical activities which pitted the valids against the invalids, such as a swimming relay race of human foosball. Furthermore, they had to play Twister, except that the dots on the game sheet were spread with dessert toppings which made the game more difficult.

The stack climaxed with a water fight in front of the Ricketts-Fleming courtyard which ended with the tired team members going to the seniors' rooms for re-

Continued on Page 2, Column 1

Copyright Protection Probed at Mock Trial

By ROBERT LI

On Friday, the Fifth Annual Conference and Mock Trial "At the Crossroads of Law & Technology" was held. This event, which in years past dealt with important and controversial issues in law and technology such as software and DNA patenting, addressed this year the impact of digital copyright protection and the Digital Millennium Rights Act (DMCA).

The DMCA is the law passed by Congress in 1998 that criminalizes the circumvention or trafficking of tools that defeat protective measures on digital copyrighted content. Since its passage, the DMCA has been a major weapon used by the movie and recording industries to fight piracy on the Internet.

However, many lawyers and freedom of speech advocates, including the Electronic Frontier Association (EFA), have asserted that the DMCA unfairly allows content owners a veto on the rights of consumers and that the DMCA has not only failed to affect digital piracy, but has been

used for purposes not intended by Congress.

The event started at 12:30 and ended at 6:00. A panel presentation giving an overview of the technology and legal backgrounds was given by Brad Hunt, Sr. Vice President and CTO of the MPAA (Motion Picture Association of America, the trade group that represents the movie industry), Seth Schoen, Staff Technologist for the EFA and Dan L. Burk, Professor of Law at the University of Minnesota Law School.

Brad Hunt gave the technical presentation and explained the basic concepts of digitization, encryption, digital rights management and digital content protection. Mr. Hunt then addressed specifically the 5C Digital Transmission Content Protection System (5C DCTP), a technology that encrypts the digital link between consumer devices so that a consumer can't record content for which he is unauthorized to do so.

Mr. Hunt also talked briefly about the FCC's recent "broad-

Continued on Page 7, Column 1

New Registrar Plans For Improved Service

By KAYTE FISCHER

After an intense five month search, Caltech welcomes its new registrar, Mary Morley. With only a couple weeks of experience at Caltech, Morley is already full of ideas. Her only dilemma is what to change first.

According to Dr. Erica O'Neal, Assistant Vice President for Student Affairs, Morley is the first full-time, non-faculty registrar Caltech has ever had.

"We need her for technology projects - web enrollment is just the beginning," explains O'Neal. In addition, Morley is tasked with improving efficiency and accuracy in processing every day data and requests from students. She hopes to change from the manual paper format to automate nearly everything.

States Morley, "I want the Registrar's office to be a service office. I want it to be seen as an office which helps and makes things easy."

In fact, Morley has a wealth of experience in high tech registrar materials. After years of work as

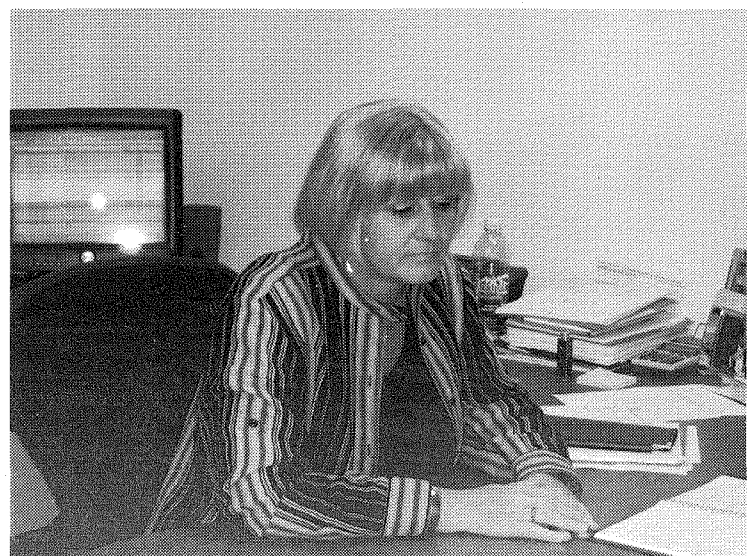
the registrar for Cal Poly Pomona, she moved to work as a consultant to PeopleSoft Inc., a company specializing in software for college registration and student information.

Furthermore, she has worked on several national committees, including steering the Student and Exchange Visitors Information System, a database collecting information about international students to aid in the process of obtaining visas.

In addition to her experience, O'Neal cites Morley's "can-do" personality and positive contagious attitude as assets. "Morley has the big picture, but also all the details. She is a perfect balance between excellent interpersonal skills and all registrar knowledge."

Indeed, Morley has several ideas for improvement already. She would like to build on the REGIS online system. Of the suggestions from the last registration session, ten to fifteen "quick hit" fixes have already been imple-

Continued on Page 7, Column 3



L. Tran/The California Tech

Mary Nealy Morley meets with a student after taking office as the new registrar on May 10.

Renovations Project Prepares To Move Forward; Seeking Funding

By KEVIN BARTZ

A joint meeting between Student Affairs administrators and a representative from the Interhouse Committee to choose an architect for the long-awaited

renovation of the South Houses has been slated for June 8.

In a related development, Campus Life Director Tom Mannion is expected to hand down a decision next week on whether to house students in modular housing or in

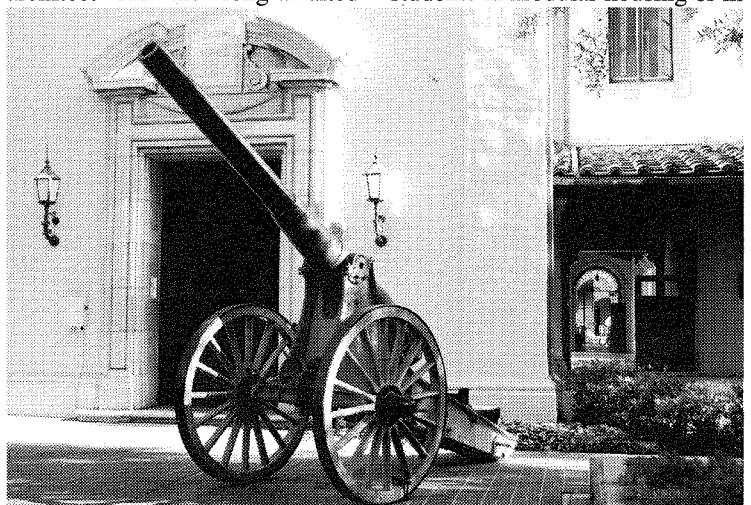
institute-owned S. Catalina Ave. housing in the interim.

Student Affairs has tagged just over \$3.3 million of the \$36.5 million project for relocating students while construction teams renovate the South Houses--presently home to 287 students. The move would be temporary, affecting only the 2005-2006 academic year and the summers immediately before and after. Relocating students to the S. Catalina housing would mean displacing its 152 current graduate student residents.

The SAC will also be relocated in anticipation of the year-long construction, a move slated to happen by March in 2005 and which will set planners back just under \$1.1 million.

Approved last March by the Buildings and Grounds Committee, the renovation of the South Houses aims to alleviate what the proposal calls "the most sig-

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D. Korta/The California Tech

The south houses have long awaited renovations to fix up various problems and to bring them up to code.

DITCH DAY 2004

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freshments.

"Overall, it was enjoyable. Ditch Day was certainly a refreshing break from the oft-tiring Caltech schoolwork and provided a good forum to spend quality time with peers. Although the stack I did wasn't as elaborate as I imagined, I still enjoyed myself thoroughly, enough to be sufficiently tired by the end of the day," said Tsai.

Meanwhile, freshmen Ken Ho, Jimmy Jia, Carlos Saldana, Samantha Lu, Eddie Truong-Cao, Lena Nguyen, David Romero, Mark Eichenlaub, Randall Wald and sophomores Felicia Katz, Franklin Jiron did a stack named Tomb Raider: The Stack (Lara Croft vs. Indiana Jones) planned by seniors Hermes Huang and Theresa Tiefenbrun.

On a quest to find a treasure which had been unearthed by an earthquake, they, divided into two teams, were given a page out of an ancient journal which detailed clues on where to find the next clue. Throughout the day, they found encoded messages which they had to decipher in order to find the treasure at the end.

The Lara Croft team, which consisted of Ho, Jiron, Katz, Jia, Saldana and Lu, accidentally found the clues in the wrong order, which caused them to finish the stack early. However, after they called Huang and Tiefen-

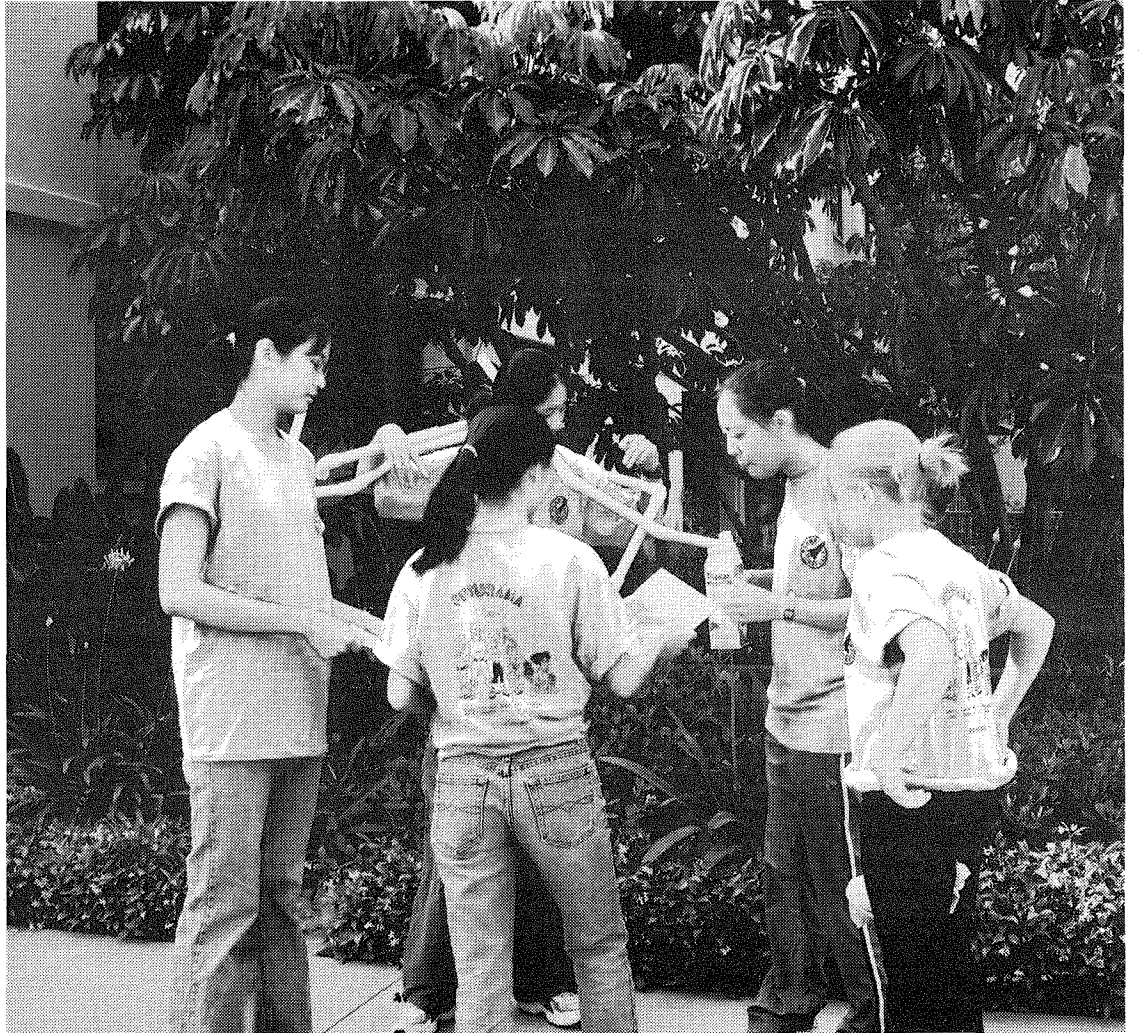
run, they discovered that there was much more which needed to be done, making the day worthwhile.

"I didn't expect the stacks to be so involved. I supposed that you could say that everything surpassed my expectations by a notch. The stacks were very elaborate. A lot of thought was obviously put into the planning of it and just to realize how much that the seniors had to pull together in that short amount of time. I think that's insane," said Ho.

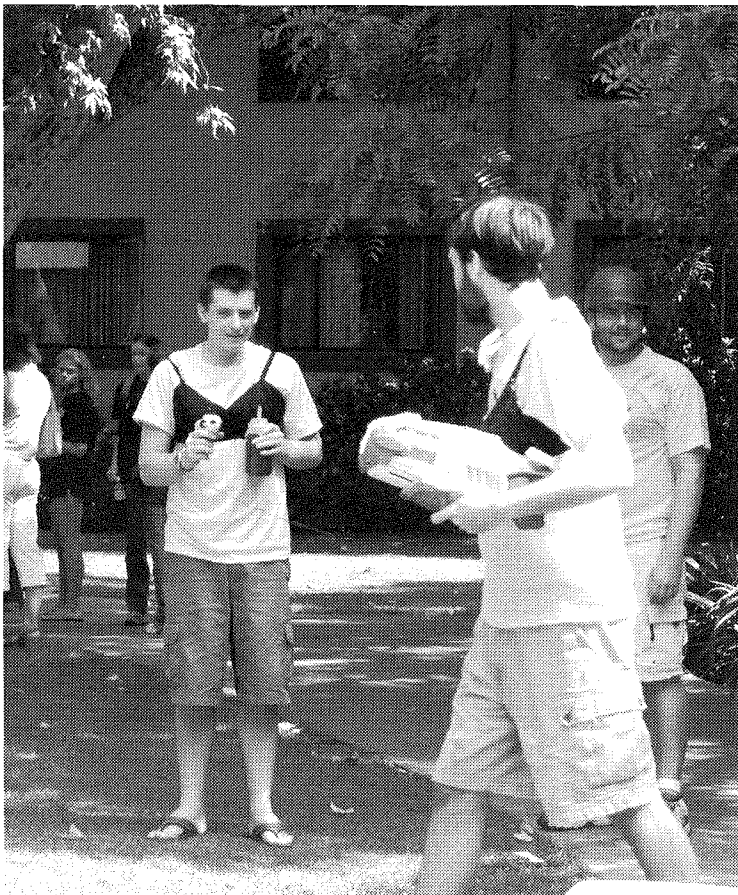
As Ditch Day 2004 wound down to a close, many people found time to reflect upon the experience.

"The end was the best part. Not in a negative way, but it was the best time to reflect upon the fact that everyone on campus thoroughly enjoyed themselves and that you were a part of an event that really was able to release Techers from their work and worries. For Fleming, we gathered atop the cannon after officially signaling the end of Ditch Day at 5 and took pictures. Being amongst the crowd of tired but happy and smiling faces is a fulfilling experience in of itself," said Tsai.

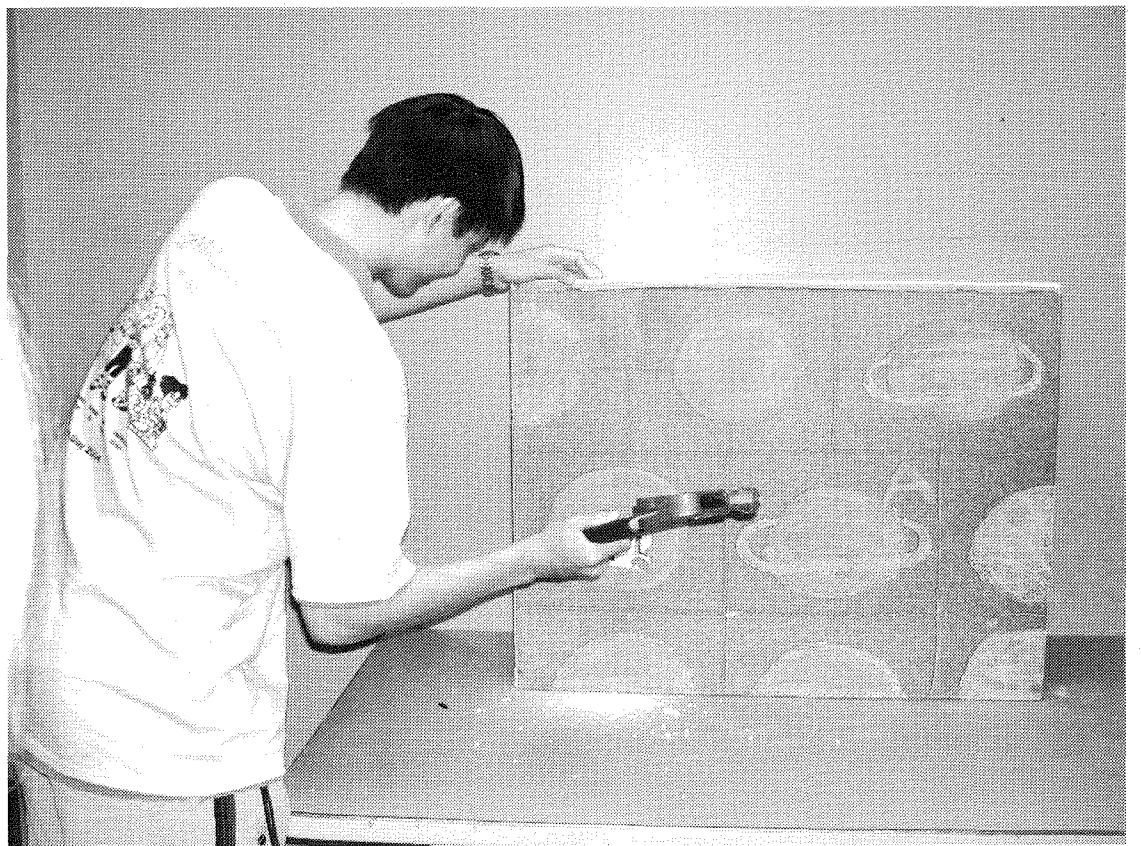
Along with reflection upon the uniqueness of the Ditch Day tradition, the end of the day left many underclassmen eager for next year. "I'm curious what the next class will think up," said Yu.



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VOLUME CV, NUMBER 28

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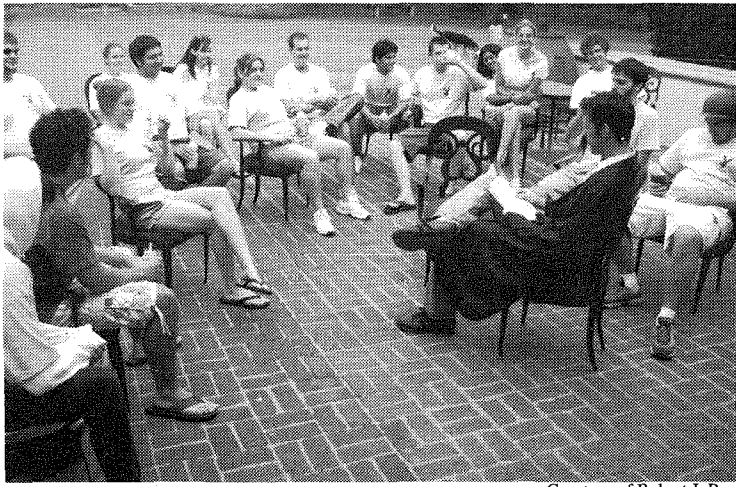
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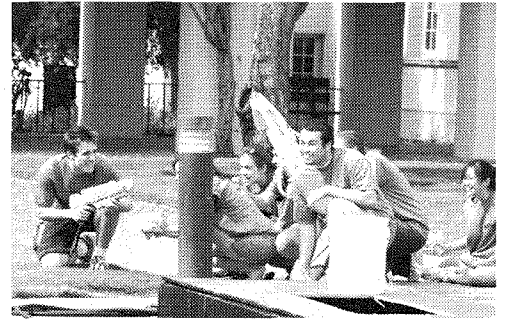
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DITCH DAY 2004



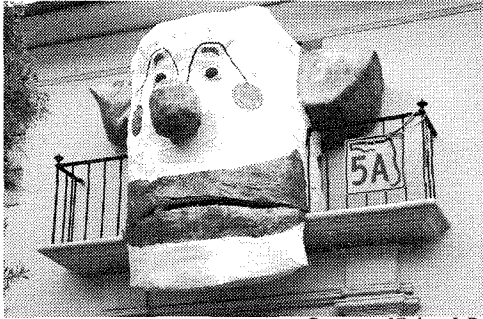
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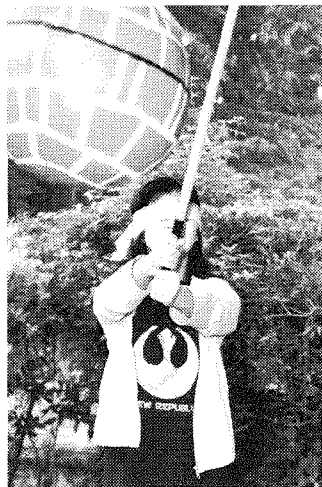
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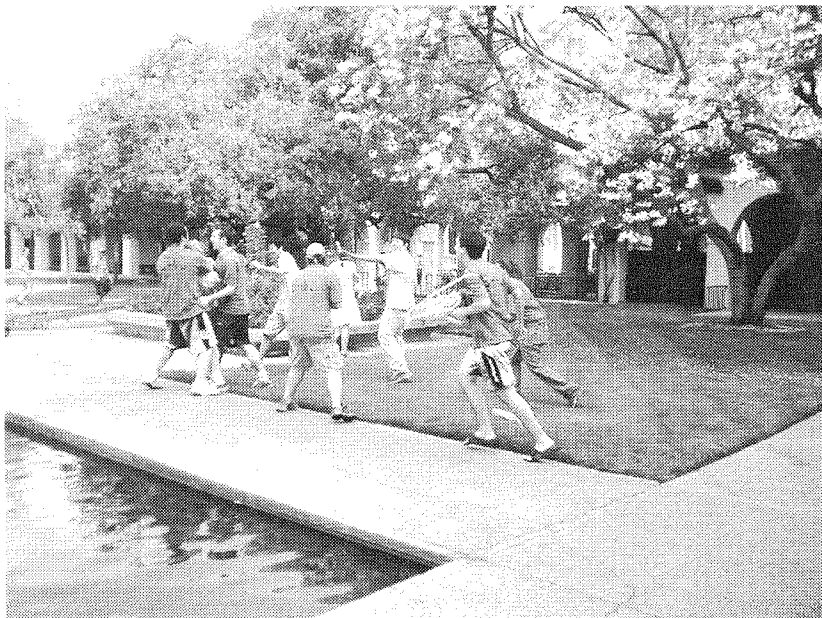
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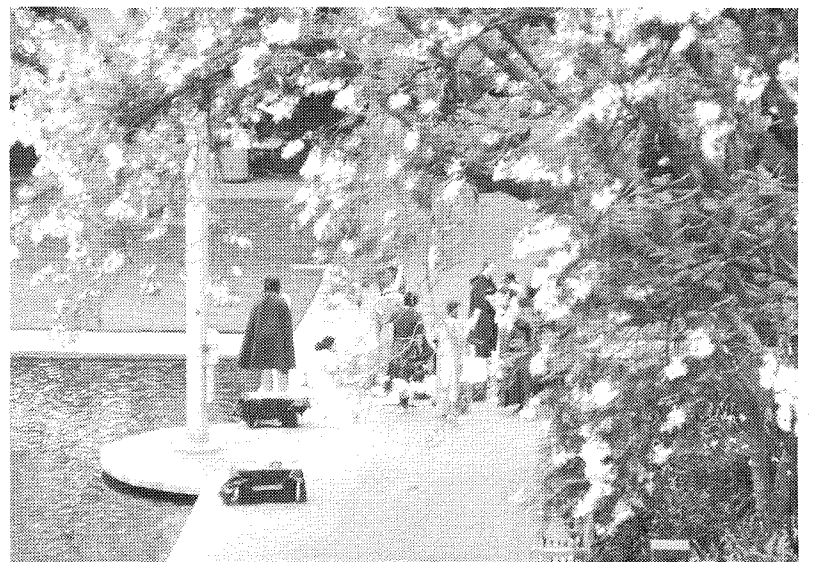
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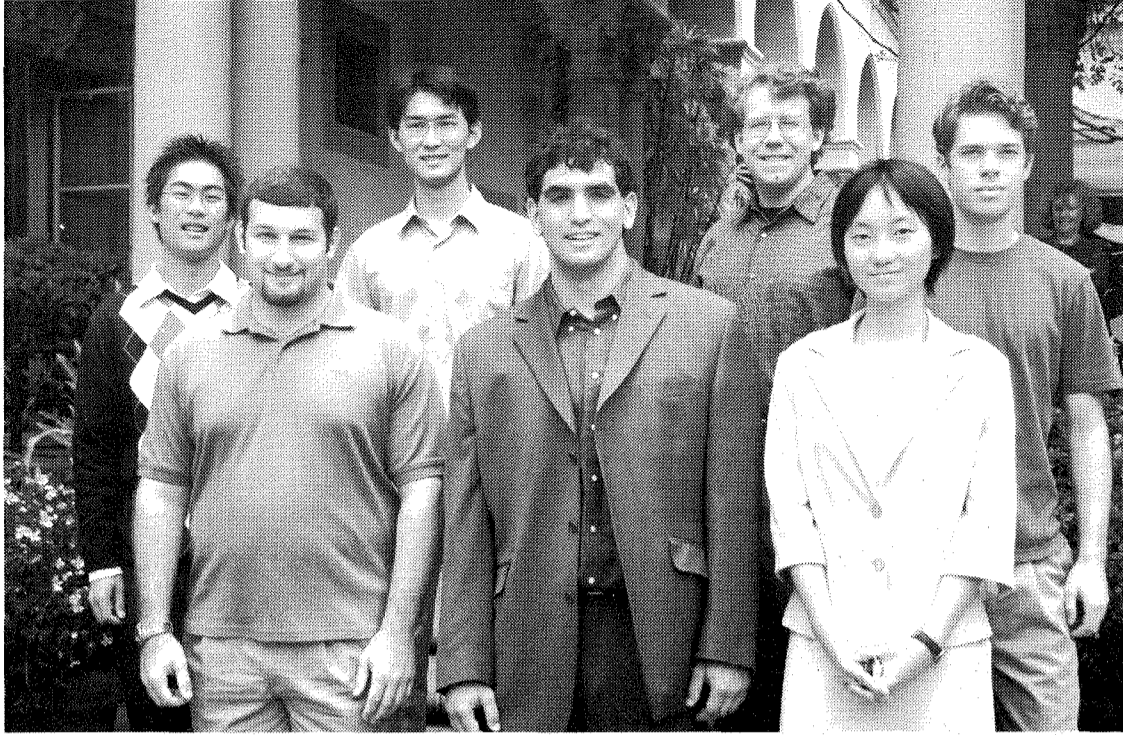
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courtesy of Robert J. Paz

From top left, clockwise: Wei Lien Dang, Bin Wu, Peter Freddolino, Trevor Wilson, Yan Qi, Issac Hilburn and Harris Nover are this year's recipients of various academic awards

Undergraduate Academic Awards Presented to Outstanding Students

By MALINA CHANG

The Green, Froehlich, Haagen-Smit, Sigma Xi, Henry Ford II Scholar and Zeigler Awards were presented on May 18, 2004, at a luncheon in the Athenaeum, hosted by the Interim Dean of Students Rod Kiewiet and Associate Dean Barbara Green.

Isaac Hilburn, senior in Geophysics, and Harris Nover, senior in Mathematics, received the George W. Green Prize. The Green Prize is awarded to an undergraduate student in any class for original research, an original paper or essay, or other evidence of creative scholarship beyond the normal requirements of specific courses.

The Jack E. Froehlich Memorial Award is for outstanding juniors in the top 5% of the class. Wei Lien Stephen Dang, junior in Applied Physics was selected this year.

Yan Qi, junior in Biology and Chemistry, won the Arie J. Haagen-Smit Memorial Award, which is given to a chemist or biologist who has shown academic promise and has made recognized contributions to Caltech.

Peter Freddolino, senior in Biology, received this year's Sigma Xi award. This award is given to a senior for an outstanding piece of original scientific research.

Bin Wu, a junior in Electrical Engineering, is this year's recipient of the Henry Ford II Scholar

Award. This prize is given to the engineering student with the best academic record at the end of the third year of undergraduate study.

Trevor Wilson, sophomore in Mathematics has been chosen as this year's winner of the Fredrick J. Zeigler Memorial Award. This award was established in 1989 to honor Fredrick J. Zeigler, a member of the class of 1976 and an applied mathematics major. The award is given to a pure or applied mathematics student in the sophomore or junior year who has shown excellence in scholarship as demonstrated in class activities or in preparation of an original paper or essay in any subject area.

Jean-Paul Revel Back As Dean of Students

ASCIT Minutes
May 18, 2004

Present: Ann Bendfeldt, Ryan Farmer, Shaun Lee, Kelly Lin, Galen Loram, Kim Pependorf, Claire Walton, Corinna Zygourakis

Absent: Jenny Fisher
Guests: Rumi Chunara, Matt Krogstad

Introduction:

1. Call to Order, 12:10 PM

New/Open Positions:

2. Congratulations to the newly selected student representatives of the following committees:

Library: Nyssa Thompson

REGIS: Joanna Cohen

Core Curriculum Steering Committee: Grant Chang-Chien, Kulsoom Hasan, Francesca Colonnese (alt)

Academic Policies Committee: Francesca Colonnese, Lizz Felnagle, Angelina Crans (alt)

Institute Size: Matt Krogstad

Students interested in the Library or REGIS committees should contact their ARC rep or Jenny Fisher by Friday, May 28. Those interested in being an alternate on the Institute Size committee should contact Corinna Zygourakis.

3. The IHC will interview student representatives for the committee to select architects for the South House renovations. The committee will see presentations by 3 or 4 architects on June 8 from 8 AM to 5 PM. If you have any questions, contact ihc@ugcs.caltech.edu.

4. The Grievances Committee is looking for student representatives! This committee accepts complaints about any aspect of Caltech and its community. Interested students should contact ihc@ugcs.caltech.edu.

Money Requests:

5. Rumi Chunara and Mazharedin Taghivand ask to take Professor Ali Hajimiri out to lunch at the Ath. Vote: 5-0-0 (approved).

Other Business:

6. BoD welcomes back Dr. Jean-Paul Revel as Dean of Students.

7. Claire Walton reports that ASCIT Formal tickets can be purchased online at donut.caltech.edu. The formal will be held on Saturday, May 29, at the Omni Hotel and the LA Museum of Contemporary Art. It will be lots of fun, and you don't need a date to attend!

Meeting adjourned 12:30 PM.

Respectfully submitted,
Corinna Zygourakis
ASCIT Secretary

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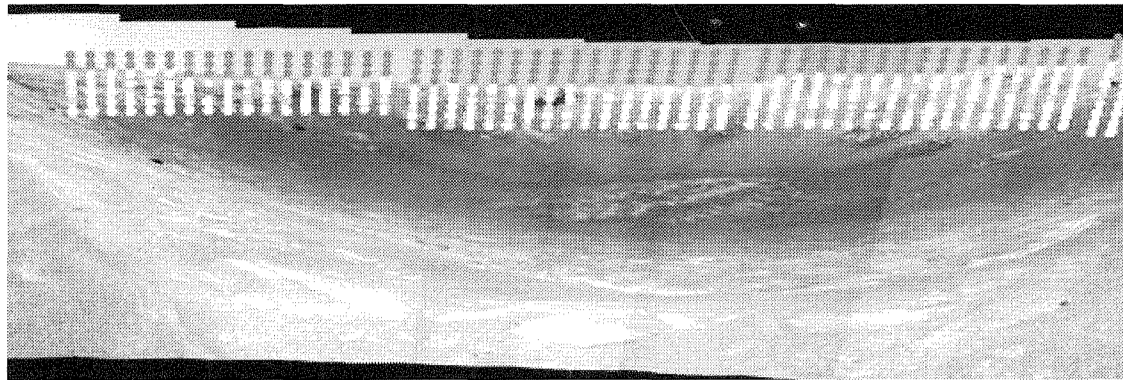
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Courtesy of NASA/JPL/Cornell/ASU

Surface composition in "Endurance Crater" is mapped with color-coded interpretation of data from the miniature thermal emission spectrometer on NASA's Mars Exploration Rover Opportunity. The information has been overlaid onto a view of the crater from Opportunity's panoramic camera. Green, such as on some slopes, indicates material rich in the mineral hematite. Blue and purple, such as on some cliffs of exposed rock, indicate the presence of basalt. Basaltic material is volcanic in origin, but the basalt may have been broken down into sand by weathering, then re-deposited by wind or water. Red indicates areas covered by martian dust.

Mars Rover Opportunity Inspects Rock Ejected From Impact Crater

By GUY WEBSTER

NASA's Mars Exploration Rover Opportunity has begun sampling rocks blasted out from a stadium-sized impact crater the rover is circling, and the very first one may extend our understanding about the region's wet past.

Opportunity is spending a few weeks examining the crater, informally named "Endurance," from the rim, providing information NASA will use for a decision about whether to send the rover down inside. That decision will take into account both the scientific allure of rock layers in the crater and the operational safety of the rover. Opportunity has completed observations from the first of three planned viewpoints located about one-third of the way around the rim from each other. Mission controllers at NASA's Jet Propulsion Laboratory, Pasadena, Calif., are sending the rover around the crater's rim counterclockwise.

"As we were proceeding from our first viewpoint toward our second viewpoint, we saw a rock that looked like nothing we'd ever seen before," said Dr. Steve Squyres of Cornell University, Ithaca, N.Y., principal investigator for the science instruments on both Mars Exploration Rovers. The rock appears to have come from below the area's current surface level, tossed up by the impact that excavated Endurance Crater.

This rock, dubbed "Lion Stone," is about 10 centimeters tall and 30 centimeters long (4 inches by 12 inches). In some ways it resembles rocks that provided evidence of past water at the smaller crater, "Eagle Crater," in which Opportunity landed. Like them, it has a

sulfur-rich composition, fine layering and spherical concretions, and likely formed under wet conditions.

"However," Squyres said, "it is different in subtle ways from what we saw at Eagle Crater: a little different in mineralogy, a little different in color. It may give us the first hint of what the environment was like before the conditions that produced the Eagle Crater rocks."

Inside Endurance Crater are multiple layers of exposed rocks that might provide information about a much longer period of environmental history. From the viewpoints around the rim, Opportunity's miniature thermal emission spectrometer is returning data for mapping the mineral composition of the rocks exposed in the crater's interior.

"We see the coarse hematite grains on the upper slopes and basaltic sand at the bottom," said Dr. Phil Christensen of Arizona State University, Tempe, lead scientist for that spectrometer. "Most exciting is the basalt signature in the layered cliffs." Basalt is volcanic in origin, but the thinness of the layers visible in the cliffs suggests they were emplaced some way other than as flows of lava, he said.

"Our working hypothesis is that volcanically erupted rock was broken down into particles that were then transported and redeposited by wind or by liquid water," Christensen said.

At a press conference today in Montreal, Canada, Christensen and Squyres presented previews of rover-science reports scheduled this week at a joint meeting of the American Geophysical Union and the Canadian Geo-

physical Union.

Although the stack of rock layers at Endurance is more than 10 times thicker than the bedrock exposure at Eagle Crater, it is still only a small fraction of the 200-meter-thick (650-foot-thick) stack seen from orbit at some other locations in Mars' Meridian Planum region. A close-up look at the Endurance Crater rocks could help with interpreting the other exposures seen from orbit. "It's possible that the whole stack was deposited in water -- some particles washed in by flowing water and others chemically precipitated out of the water," Christensen said. "An alternative is that wind blew sand in."

Halfway around Mars from Opportunity, Spirit is driving toward highlands informally named "Columbia Hills," where scientists hope to find older rocks than the ones on the plain the rover has been crossing. The rover could reach the edge of the hills by mid-June. "Spirit is making breathtaking progress," Squyres said. "The other day it covered 124 meters [407 feet] in one day. And that's not a parking lot we're crossing. It's hilly, rock-strewn terrain. This kind of pace bodes well for having lots of rover capability left when we get to the hills."

JPL, a division of the California Institute of Technology in Pasadena, manages the Mars Exploration Rover project for NASA's Office of Space Science, Washington, D.C. Images and additional information about the project are available from JPL at <http://marsrovers.jpl.nasa.gov> and from Cornell University at <http://athena.cornell.edu>.



Continued from Page 1, Column 5

Mathematics (SIAM). Come hear an insightful talk and obtain interesting career advice. Sign up for free student membership to SIAM during the event. For more information, please visit <http://www.its.caltech.edu/~siam>.

Sponsored by SIAM, student affairs and the GSC.

CalTech Grad Students...

Stuck here doing research on your dissertations? Then take a break from the typical 'all nighter'...on Thursday, June 17, join us for the **FREE LACMA Overnight Tiki Till Dawn Party** which opens the museum to party-goers beginning at 7 pm and continuing till 7 am the following morning.

In addition to free admission to exhibitions including Beyond Geometry and Inventing Race, the party features live music, DJ Diabetic, a sneak preview of the new Sony Pictures Classics surf film Riding Giants, and appearances by L.A. authors including Gary Baseman signing Dumb Luck, Robbie Conal signing Art Burn, Sandow Birk signing Dante's Inferno, and Shag signing Tiki Drinks, Shag's Around the World in 80 Drinks, and Shag Party.

Party fun also includes films, interactive graffiti murals, live improv, no-host barbecue and tiki bar, and a random drawing to award a lucky winner two free plane tickets to anywhere in the world that Air France flies. A custom-painted motor scooter created by artist Shepard Fairey will also be the featured prize in a summer-long silent auction, proceeds of which will benefit LACMA art education programs for at-risk youth.

We wanted to send our friends at CalTech a special, advance invitation to our latest event given the raving success of LACMA's first free "all-nighter" - Cabaret LACMA, which drew nearly 9,000 party insiders!

Caltech's 2nd annual "Travel Fair" will take place on Wednesday June 16th from 11:00 to 2pm in front of the Chandler Dining Hall. Come to meet and greet the travel and peard departments and our many travel vendors. There will be music and a barbecue meal will be available to purchase at Chandler. Prizes will be donated by some of our top vendors, (winners must be students, staff or faculty of Caltech.) Come and enjoy the sunshine and the fun!

Summer Work Study: Information and applications for 2004 Summer Work Study are available in the Financial Aid Office. If you are interested in Summer Work Study, please submit the required application as soon as possible, but no later than June 1, 2004. Your entire financial aid application must be complete by June 1, 2004 in order to be considered for Summer Work Study. If awarded, the work study funding will begin July 1, 2004.

The Hawaiian Club is offering hula (traditional Hawaiian dance) lessons this term! Class will be held in Winnett Lounge on Saturdays from 2-4pm until May 29 (with the exception of 4/24 and 5/1; these classes will be held on Sunday, 4/25 and 5/2). The cost is \$5/class for Caltech community members; \$12/class for all others.

For more information, see our club website at <http://www.ugcs/~lilinoe> or email us at maruchan@its.

The Collegiate Inventors Competition 2004

Call for Entries
Download the application packet from: www.invent.org/collegiate
To recommend someone for the award E-mail collegiate@invent.

org or call 330-849-6887

The Grand Prize Award is \$50,000. The Deadline for the 2004 competition is June 1, 2004.

Humanities and Social Sciences Seminars for this Term:

28 May (Friday) HPS Seminar Brian Copenhaver (UCLA). "From Magic to Science: Seeing a Way Out"

SCHOLARSHIPS

The American Association of Japanese University Women is currently accepting applications for their 2004 scholarship program. Female students enrolled in accredited California colleges and universities, who will be junior, senior or graduate student by Fall 2004 are eligible to apply. You may pick up an application in the Financial Aid Office or e-mail them for more information. E-Mail Address: aajuw@worldnet.att.net The deadline for this scholarship is September 30, 2004.

The Ayn Rand Institute presents the **6th Annual Essay Contest on Ayn Rand's Novel "Atlas Shrugged."** There is one \$5,000 scholarship and two second prizes of \$1,000. There are also third, finalist, and semifinalist prizes available. The deadline for this scholarship is September 16, 2004. Additional information and essay topics are available on their website: <http://www.aynrand.org/contests>.

Key Education Resources is excited to announce the **TAKE 5 Scholarship Offer!** Five lucky winners will win \$5,000 each. The scholarship will be offered each month for 5 months. The deadlines for each monthly scholarship and additional information are available on their website: <http://www.Key.com/Take5>.

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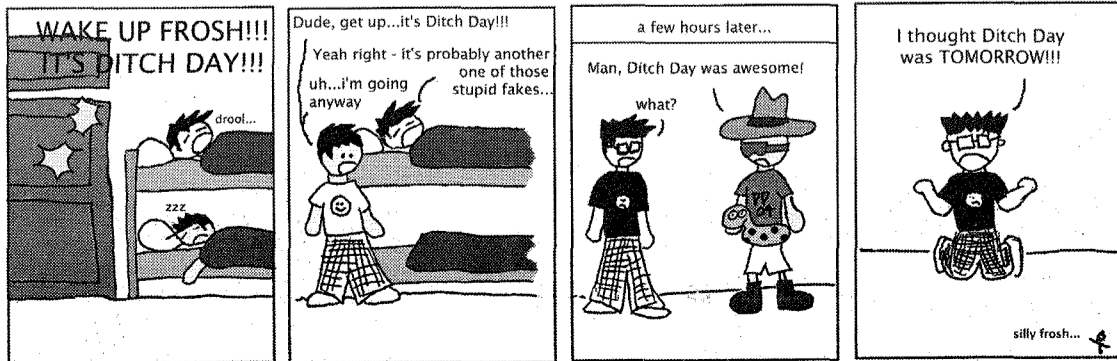


GEYING BROW

An Uplifting Comic for the Average Teacher

BY HAMILTON FALK AND JACK LGE

edited by Cat Chou



"New" Dean Chosen

By GALEN LORAM

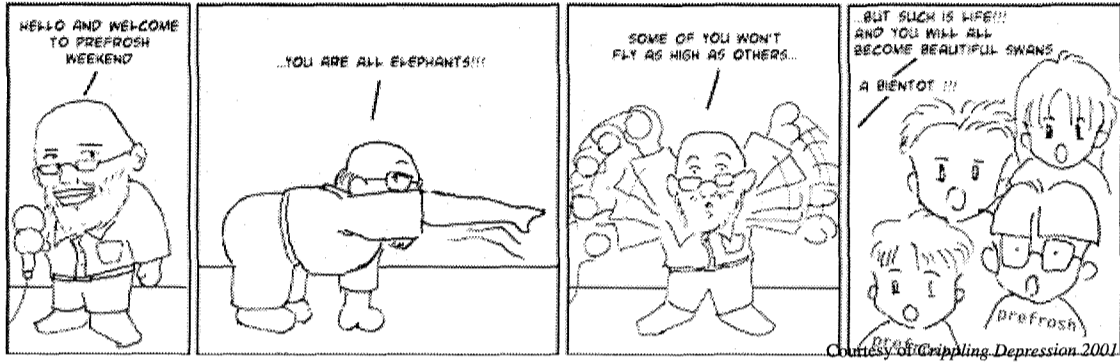
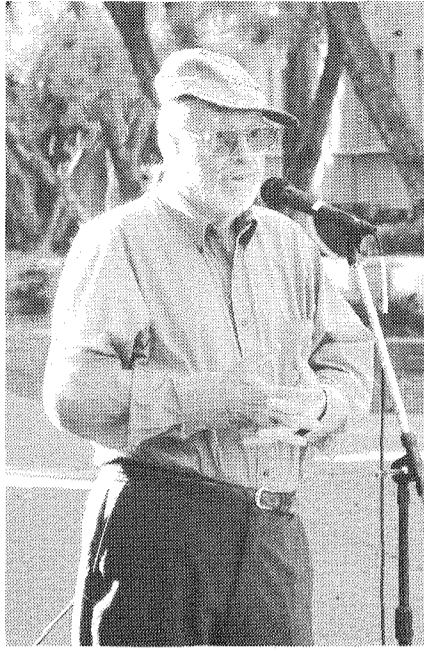
As you all no doubt know, Dean Revel stopped down a month or two ago, which set off the search for a new Dean of Students. Well, I have the pleasure of announcing (well, by this time, Margo may have sent out an email, but I get to write the article) that we have a new Dean. But it would be no fun to merely announce a name, so I'll give a couple of clues and we'll see if you can guess who it is.

The incoming dean is a man who has consistently demonstrated concern for the students over a number of years. He's often taken part in ditch day stacks, serving an army of different roles. The new commandant of the Dean's office is a Frenchman who is an

impressive artist (and not just in visual art; in colorful metaphors as well!) and a biologist. My guess is that you all know who I'm talking about by now.

I'm sure that you are all as pleased as I am to know that Jean-Paul Revel has generously agreed to give another year (of what has been more than full-time work to a theoretically part-time job) to us students and is returning after a family tragedy with redoubled empathy for students to help us keep on trekking throughout these tumultuous times.

Welcome back Dean Revel, we're wonderfully glad to have you for another year!



Welcome Back, Dean Revel!

PILED HIGHER AND DEEPER
by Jorge Cham

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Asian Pacific Heritage Week

The Asian Pacific Student Union (APSU) invites you to join us for Asian Pacific Heritage Week, a celebration of Asian culture, which takes place this week. Please visit our website for more information (www.its.caltech.edu/~apsu), or contact us at apsu@caltech.edu.

Tahitian Dancing Workshop

Tuesday, May 25, 4:00-6:00 pm

Brown Gym

Ori Tahiti, a form of traditional Polynesian dance originating from the South Pacific island of Tahiti, is famous for its sensual and dynamic storytelling. This two-hour workshop will focus on basic steps and proper technique, and is free and open to all.

Traditional Chinese Art Performances, Craft Show, and Lunch

Wednesday, May 26, noon-1:00 p.m.

Winnet quad

Performance Program:

1. Northern Chinese Drum
2. Martial Arts Demo
3. Chinese folk dance
4. Chinese instrument play -- Er Hu
5. Chinese folk singing
6. Falun Gong exercise demo

Enjoy lunch from a local Chinese restaurants (\$3 per person)

Asian craft show features Origami, Silk flower, Bead work, Chinese knots and more. All crafts are created by members from Caltech Falun Club. Artwork will be moved to the Center for Student Services and will be displayed from May 26-June 4.

Movie night - Falun Club

Wednesday, May 26, 7:00-10:00 p.m.

Beckman Institute Auditorium

7:00-8:00 p.m. - Reception and presentation of documentaries, "Falun Dafa All Over the World" and "False Fire"

8:00-10:00 p.m. - Feature presentation: To Live

Movie Night - Korean Club

Thursday, May 27, 7:30-10:00 p.m.

Beckman Institute Auditorium

7:30-8:00 p.m. - Reception

8:00-10:00 p.m. - Feature presentation: Old Boy

Make-Your-Own-Sushi

Friday, May 28, noon-1:00 p.m.

Location TBA

Make your own lunch today. Learn how to wrap sushi rolls and then enjoy!

Hawaiian "Plate Lunch"

Friday, May 28, 5:15-7:00 p.m.

Undergraduate Student Houses

"Plate lunch" describes a meal in Hawaii that brings together foods from the ethnic groups that have immigrated to Hawaii. (Dinner costs \$11 with Caltech ID.)

Movie Night - Caltech C

Friday, May 28, 7:30-10:00 p.m.

Beckman Institute Auditorium

7:30-8:00 p.m. - Reception

8:00-10:00 p.m. - Feature presentation: Hero

Ecphonema, Caltech's Men's A Cappella group will be presenting **Near Deaf Experience V** - a two hour concert of classic Ecphonema music from 5-7pm on Saturday, May 29th in the amphitheater behind Sherman Fairchild Library. Special guest groups Out of Context and Fluid Dynamics will also be singing. Come relax in the grass and enjoy an evening of rockin' music as the sun goes down. Free admission to all.

E-mail ecphonema@ugcs.caltech.edu for more information or to get on our mailing list.

The Caltech student chapter of SIAM presents:

Tony DeRose, Pixar Animation Studios.

"How Mathematics is Changing Hollywood"

Wednesday, May 26, 3:00 PM in the Beckman Institute Auditorium. Refreshments will be served at 2:30 PM.

Film making is undergoing a digital revolution brought on by advances in areas such as computer technology, computational physics and computer graphics. This talk will provide a behind the scenes look at how fully digital films --- such as Pixar's "Monster's Inc" and "Finding Nemo" --- are made, with particular emphasis on the role that mathematics plays in the revolution.

The talk will be followed by an informal forum with DeRose on the role of applied mathematics in industry. Please bring your questions.

This is the second "Meeting on Mathematics in Industry" presented by the Caltech student chapter of the Society for Industrial and Applied Math-

Continued on Page 2, Column 3

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Research Clause Saves Institute in Mock Trial

Continued from Page 1, Column 2

cast flag" regulation which requires that all HDTVs prevent the recording of content that has been broadcast with a "don't copy" flag.

On the legal side of the discussion, Prof. Burk discussed traditional copyright protections and their exemptions including the fair use provision which he described as a "safety valve for the 1st Amendment." According to Burk, the anti-circumvention clauses in the DMCA, which forbid the use and trafficking of access circumvention tools and forbids the trafficking of usage circumvention tools, effectively gives copyright owners a "paracopyright" on their materials that goes far beyond normal protections.

In addition, Prof. Burk believes that the DMCA hasn't been effective in controlling access to content while at the same time stifling research and discussion in an academic environment and having many unintended consequences including the use by a printer manufacturers to sue cartridge refill makers and the use by a company that makes garage openers to sue a maker of universal remotes.

With panel presentations over, the mock trial got underway. As promised, a video showing Presi-

dent Baltimore in handcuffs was shown. The video also laid out the facts of the case. Prof. Law at Caltech teaches a class on digital rights management. He has half the class write digital rights protection software and has the other half try to break them.

A student in Prof. Law's class, John Johnson, comes up with a way to use distributed computing to brute force a scheme devised by a classmate and posts his code to the class website. Intrigued, Prof. Law notices that Johnson's scheme can be applied to break the 5C DTCP scheme. Soon, other people realize this too and start using the course website to crack movies.

The Department of Justice gets involved and files charges against Johnson, Law, President Baltimore and Caltech on grounds of violating the DMCA. They offer to drop the charges against Law, Baltimore and Caltech if they take down the website but the two refuse on grounds that this would impede academic freedom and be a violation of their 1st Amendment rights.

The trial was presided by the Hon. Ronald S.W. Lew, a US Circuit Judge in the Central District of California. Caltech and Loyola Law School students made up the defense and prosecution teams and both teams were advised by prominent attorneys. Brad Hunt and Seth Schoen, who participated in the first panel presentation, served as expert witnesses for the prosecution and defense, respectively. The trial was setup in a motion to dismiss format which allowed the defense to go first.

The defense team presented two major arguments to support their case for dismissal. With regard to Johnson, they argued that the 56-bit encryption used by 5C DTCP was so easily broken that it cannot be considered an "effective" protection device as required by the DMCA.

Seth Schoen, the expert witness, testified that in the early 1990s people were already talking about attacking 56-bit encryption and that the US government mandated a switch to a 128-bit system for its systems in the late 90s. Furthermore, Schoen claimed that even given Moore's Law, it would take another century before 128-bits could be broken by brute force. With regard to Law, Baltimore and Caltech, the defense argued that their 1st Amendment rights were violated by the DMCA.

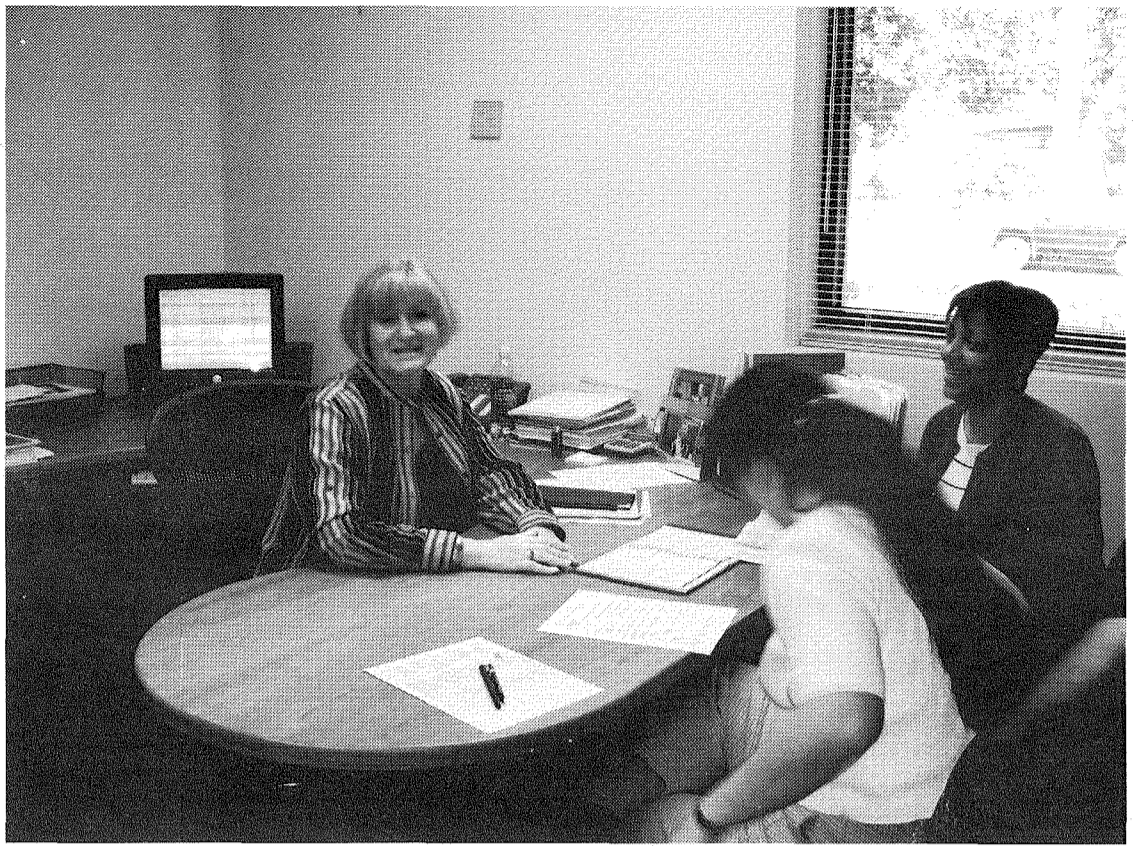
In response, the prosecution argued, with supporting testimony from Brad Hunt, that 5C is effective because it has thus far never been broken and that a home user by himself would take decades to brute force the key. Since each 2-hour movie contains at least 60 keys, it would be infeasible for a home user to break the encryption.

Regarding the 1st Amendment issues, the prosecution argued that while some code can be expressive speech, the code in this case was not and that one cannot hide behind academic freedom to commit crimes. Furthermore, because it was available to anyone on the Internet and because Law and Baltimore refused to take it down when asked by the DOJ, Law and Baltimore are contributory infringers.

After the arguments, Judge Lew retired to make his decision. During the time a second panel discussion was held to discuss alternative methods for protecting digital content. Ronald Wheeler, Senior Vice President for Content Protection at the Fox Entertainment Group argued that the current situation is very good. He described the existence of the DMCA to be critical for the success of DVDs and the movie industry.

In contrast, Fred Von Lohmann, Senior Staff Attorney for the EFA argued that the DMCA oversteps its boundaries and has had a lot of unintended consequences. In return, the DMCA has done nothing to prevent piracy. According to Von Lohmann, every movie DVD is available on P2P networks right now. Von Lohmann believes that there are three options for the future: repeal the DMCA and allow new business models to adapt to digital copies, institute mandatory licensing, or institute mandatory technology protection.

After an hour of deliberation, Judge Lew returned and delivered his preliminary ruling. He allowed the case against Caltech to be dismissed on the grounds of the education exemption in the DMCA. On all other counts, he ruled against the motion for dismissal. The 5C DTCP is effective with in the broad definition in the DMCA and Johnson, Law and Baltimore are liable.



L. Tran/The California Tech

Morley meets with her staff to discuss some of the changes that she wants to implement for registration next year.

Registrar's Agenda Includes Class Rosters, Automated Drop Cards

Continued from Page 1, Column 5

mented. Before continuing on other improvements, she will wait for the responses from this term.

Morley is investigating avenues for student feedback, including surveys, house visits and meetings with student groups such as ASCIT and the GSC. Additionally, she hopes to hear from the faculty committee. Morley states that she is open to any suggestions from students - just email them to her.

Specifically, Morley is looking at automating the drop/add process; including first year graduate students and freshmen in the database before their arrival on campus; creating online

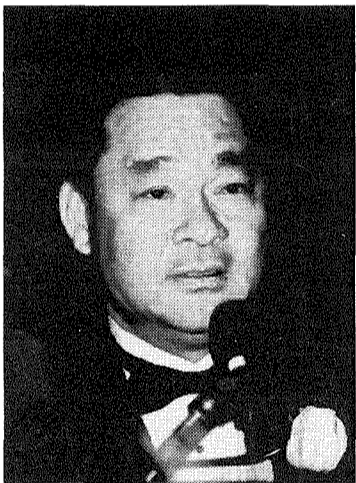
class rosters which are automatically updated during the drop/add process; and allowing a student to access his complete academic history online. In the long term, she hopes to keep unofficial transcripts online so that students can simply print them, to post grade reports online as soon as grades are completed and to keep the degree audits online so students can track necessary courses.

Obviously, all these facets will not be completed immediately. Morley hopes to finish small pieces at a time and release them as soon as they are developed. For next September, she hopes to at least have the drop/add process finished.

In addition to the online tech-

nologies, Morley hopes to update the layout of transcripts by hiring a graphic designer to modernize the look. Additionally, she wants seniors to be able to choose between an in-person course audit and an online audit to check that their exit requirements are finished. Morley is also looking at new software to reduce scheduling conflicts and allow different graphical views of the schedule. Furthermore, she notes that the Registrar's office is now open during lunch every day.

Says Morley, "I'm very open. Where we can, we want to do what is important for you. We're not just administrators - we're here to serve."



Courtesy of www.metnews.com

The Honorable Ronald Lew presided over the trial.

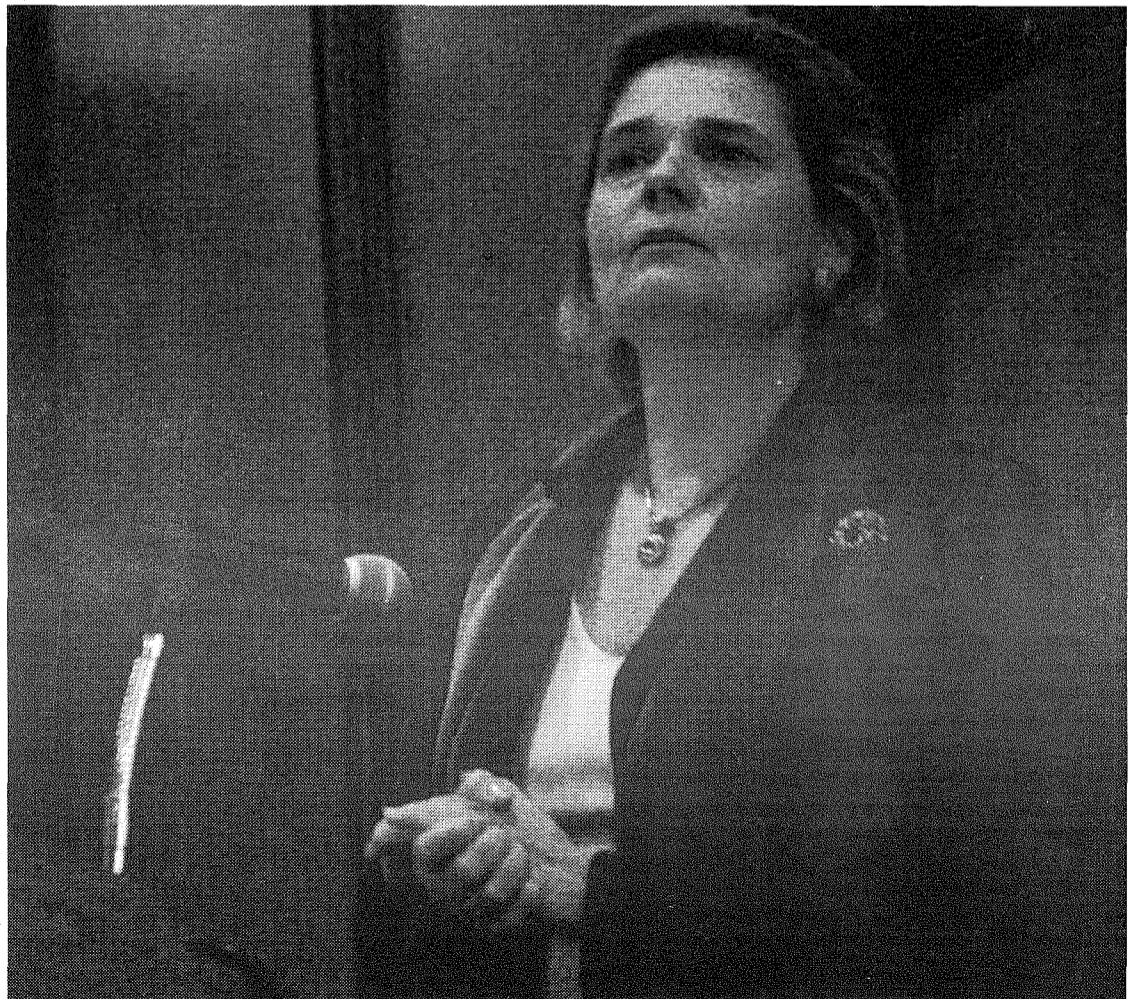
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Advanced Tissue Sciences Founder Speaks About Research, Business



D. Korta/The California Tech

Gail Naughton speaks Tuesday about her experiment where she grew a human ear on the back of a mouse and led to her skin growing business. She is currently dean of the business school at SDSU.



D. Korta/The California Tech

The south houses are going to receive a renovation that includes everything from rejuvenating the face of the building to upgrading rooms to re-landscaping the courtyards.

UCLA Predicts High Magnitude Earthquake; Professor Skeptical

By ROYAL REINECKE

A group at UCLA under professor Vladimir Keilis-Borok shook both Southern California Residents and the scientific community with its recent prediction for an earthquake of at least magnitude 6.4 to happen by this September. Keilis-Borok places the earthquake to occur somewhere within a 12,000 square mile area spanning from the Mojave Desert to the Mexican border to near Los Angeles.

Clearly such a prediction gives cause for Californians to take precautions, but Caltech professor of Geophysics and Director of the Seismological Laboratory Jeroen Tromp is doubtful of the group's approach. "The trick is in the cookbook," he explains. Tromp reveals that Keilis-Borok bases his method entirely on "pattern recognition" - without any actual scientific understanding behind it.

Keilis-Borok looks for sequences of earthquakes in space and time. These "chains" as he refers to them, can be characterized by seven or eight parameters such as proximity of the quakes, minimum magnitude and other factors that might intuitively lead you to believe that a much larger earthquake could occur nearby. For each of the factors, a number is assigned with respect to how well the chain fits and if the total exceeds a certain value, then Keilis-Borok makes a prediction. Different regions such as Southern California, Northern California, Japan, etc, each add differing values for the various parameters in order that the algorithm fit best for each individual area.

By testing his method on the catalogue of recorded earthquakes, Keilis-Borok trains his algorithm to make more accurate predictions. So far he has been able to detect two massive earthquakes in the past year before they happened--the first of magnitude 6.5 in central California and the second an 8.1 magnitude quake in Japan.

Yet Tromp remains skeptical of the accuracy of these predictions.

First of all he notes the huge area encompassed by each prediction. Tromp both literally and figuratively points to "the large gray area" that shows where each predicted earthquake could have occurred. Not only that, the predictions describe areas that are naturally very active tectonically.

Additionally the predictions span a fairly long window of time, usually about nine months. The possible time window for the current predicted quake in southern California spans October 29, 2003 through September 5, 2004.

Tromp feels that the predicted earthquakes that occurred in 2003 could have happened just as easily "by chance." Two predictions do not provide enough evidence for him to take Keilis-Borok's method as foolproof.

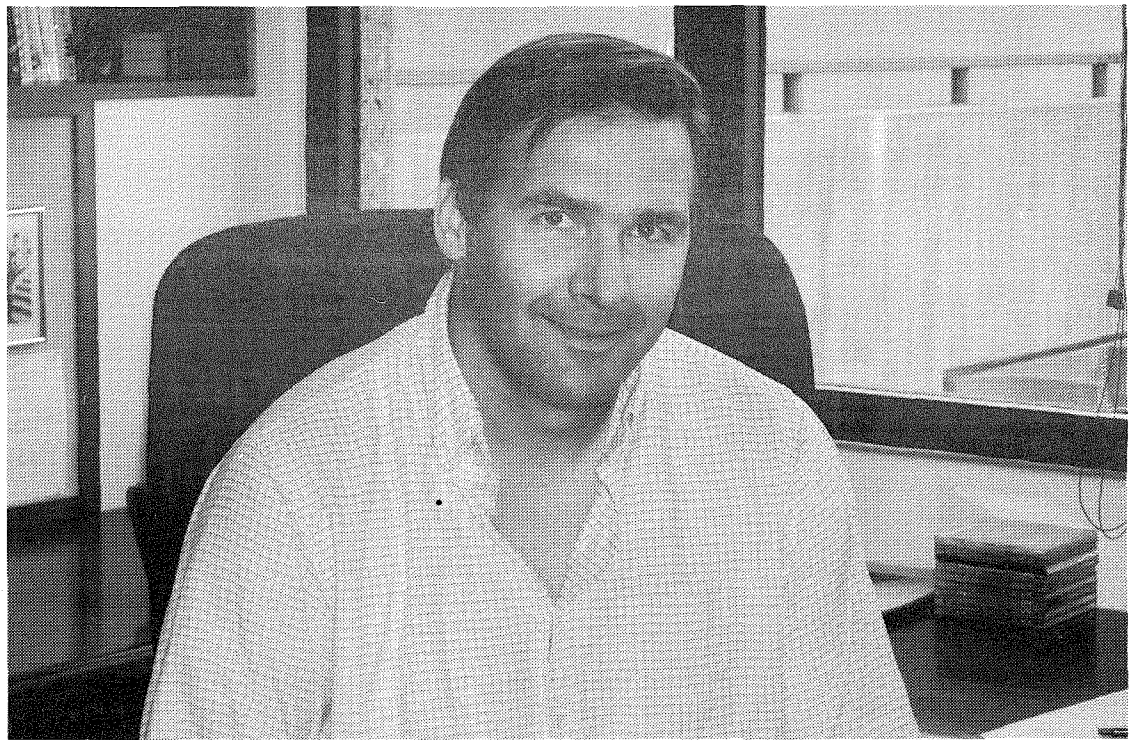
Tromp firmly believes "there is no point in having a press release" about these predictions whether or not they come true. He explains that in the case that an earthquake does occur, geophysicists will look bad for not doing something. If, on the other hand, no earthquake occurs, then the geophysicists will lose their credibility and the public will think them bad at predicting, even into the future when they may possibly find an accurate scientific way of prediction.

Keilis-Borok's method can be considered a failure in two possible circumstances. First, failure must be accepted when a predicted earthquake does not occur or is not of the minimum magnitude predicted. For example, if an earthquake of magnitude 6.3 happens in southern California by September, this will be a failure, while any earthquake of magnitude 6.4 or greater indicates success. The second way for the group to fail is if some large earthquake occurs that they failed to predict beforehand.

Tromp definitely believes "Keilis-Borok's research is worth pursuing." However he would strongly like to see much more concrete evidence and understanding before using the method to inform the public at large

of possible earthquakes. Tromp feels that perhaps the method "in some way we do not understand explains the underlying physics." Yet until we truly figure out the process, he remains skeptical and sees the value of these predictions to be a false alarm.

In any case, Tromp relates, "at least people will be preparing themselves better for the threat--whether an earthquake does or does not happen by September."



L. Tran/The California Tech

Dr. Jeroen Tromp, Director of the Seismological Laboratory, has expressed doubt about the method used to predict an earthquake of magnitude 6.4 in southern California by September.

\$5.4 Million Marked For Repairing Rooms

Continued from Page 1, Column 5

nificant concentration of deferred maintenance challenges on campus." The project is the first plank in a long-term development campaign that includes renovating the North Houses and Chandler Dining Hall and building a Campus Center at the present site of the Physical Plant.

A total of \$30.7 million is earmarked for construction costs of the renovation, which includes a 33% allowance for soft costs and overages. Of that, the biggest chunk, \$5.4 million, will go towards improvements in living spaces now in disrepair.

The next largest piece, \$2.8 million will upgrade the renovated structure, including \$1.7 million to digitally reproduce student-drawn murals now decorating house walls and to fill in historical details carved in column supports and window surrounds. The other \$1.1 million in upgrade money will build an 1800-square-foot faculty-in-residence apartment above the South House servery, once the Board of Trustees, as expected, approves the plan.

Other notable renovation costs include \$1.2 million for disabled accessibility, \$1.2 million to touch up the South Houses' kitchen, \$1.3 million for enhanced earthquake proofing and \$2.7 million for new electrical, phone and network links. Another \$1.3 million will go towards demolition, followed by \$1.1 million to re-decorate the exterior. Replanting trees will cost \$338,000 and fire-safety upgrades \$833,000.

A joint committee will meet June 8 to choose an architect, who Student Affairs hopes will draft a design by February in 2005. After taking bids from contractors by April and clearing it with the city by May, construction is slated to

begin promptly after graduation in 2005 and finish by September in 2006 for re-occupation.

It may be an aggressive schedule, but the time frame for remodeling Chandler is even shorter: after taking bids and compiling blueprints this summer, administrators hope to have a new Chandler open by February in 2005. Key planks of the \$2.3 million Chandler project include a 2,000 square-foot expansion for 130 new seats to ease overcrowding and a more streamlined servery that planners hope will eventually serve dinner as well as lunch. The expansion will be just north of Chandler's present location and is meant to service primarily undergraduates on declining-balance board plans.

The Campus Center may be more of a challenge. Pomona College in Claremont set aside \$18.3 million and 65,000 square feet for its new Smith Campus Center--much more freedom than Caltech's project will have--but administrators report that undergraduates there simply do not use the facility and they're working now to make some atmospheric changes.

As such, keeping money in reserve will be crucial. To this end, a team of administrators led by Business and Finance Vice President Al Horvath have so far procured \$20 million for the project and its associated costs, \$18 million from bonds and another \$2 million from gifts, while \$16.4 million remains to be raised. They hope that a combination of gifts and possible construction underages will be enough for the remainder and if there's any left over, it will go towards jump-starting the preceding renovation of the North Houses.

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