

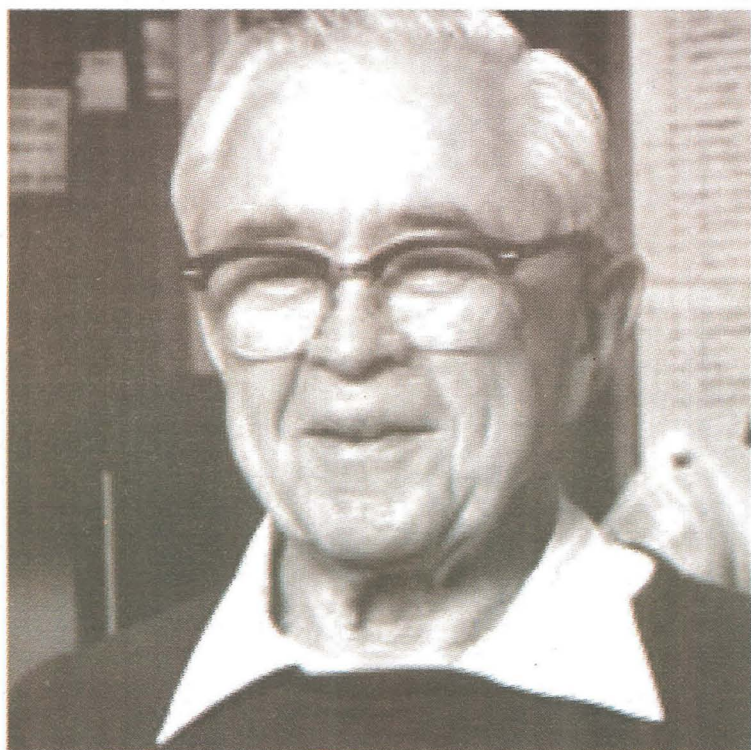


# The California Tech

VOLUME CVI, NUMBER 24

PASADENA, CALIFORNIA

APRIL 25, 2005



Courtesy of pr.caltech.edu

## Campus Weather Station to Be Dedicated to the Late Caltech Nobel Laureate Ed Lewis

By ROBERT TINDOL

The famed geneticist Ed Lewis won his Nobel Prize for his breakthroughs in understanding how genes relate to embryonic development. But for four years in World War II, he served as a U.S. Army meteorologist.

On April 26, the late California Institute of Technology professor will be honored for his war service with the dedication of the Ed Lewis Memorial Weather Station on the Caltech campus. The station provides real-time weather information as part of the WeatherNet network of schools with weather stations on their campuses.

Activities begin with welcoming comments by Elliot Meyerowitz, a plant geneticist who is Beadle Professor of Biology and current chair of the Caltech biology division, where Lewis was a faculty member from 1946 until his death in July 2004. Meyerowitz will be followed by Stephanie Blozy, a WeatherBug meteorologist, who will present an overview of the weather station and its role on television, in schools, and on the computer desktop. Meyerowitz will then introduce KNBC-TV weathercaster Fritz Coleman, who will present the formal welcome to the public on behalf of NBC4 WeatherNet. At approximately 4:50 p.m., Meyerowitz will present the "Golden Anemometer" to Pamela Lewis, the widow of Ed Lewis, and their son Keith Lewis (an anemometer is a device for measuring wind speed and liquid flow). Following the presentation ceremony will be the unveiling of the weather station's digital display and plaque by Meyerowitz and the Lewis family.

Lewis spent his life working on the genetics of the fruit fly, with special attention to the fundamental ways in which the genes relate to embryonic development. The work had profound implications

for a basic understanding of the genetic regulation of development in humans.

In a book published on Lewis a few months before his death, author and longtime collaborator Howard Lipshitz wrote that Lewis's scientific research was "the bridge linking experimental genetics as conducted in the first half of the 20th century, and the powerful molecular genetic approaches that revolutionized the field in its last quarter." Lipshitz also lauded Lewis's much less widely known work on the understanding of radiation and cancer, and closely related issues con-

Continued on Page 2, Column 4

## Housing Marks Its Territory, Obfuscates Swear Words

By JACOB LEONARD KING

In the early morning hours of Monday, April 11, several students in Ricketts and Dabney awoke to find splotches of fresh white spray paint covering various wall paintings and graffiti. White blobs hovered on the walls in the otherwise yellow Ricketts alley "Id" as well as "Snatch" and in nearly every alley in Dabney. The censored material was as varied as explicit paintings of stick figures in sexual positions and statements such as "Fuck censorship." The painters employed no clear standard in covering individual words or entire statements: they only covered the "anus(es)" in "Sexx my anus(es) [sic]" but blotted out "sex" on the opposite wall.

Caltech has long practiced the tradition of freedom of expression in wall painting. While some murals of abstract or pastoral scenes date back to the 1960's, students in some houses constantly add more works and vent frustrations by scribbling comments on the walls ranging from erudite witticisms to crude expletives. For many houses, this forms an integral part of the culture and daily life; consequently, students take any threat to this right personally.

At first, students did not know what to make of the situation, so Dabney House President Brandi Cossairt and Interhouse Committee Chairman and Dabney resident Peter Foley complained at the subsequent IHC meeting to Margo Marshak, Vice President of Student Affairs, and to others in the administration.

At this meeting, "we reached a compromise of a 48 hour warning," said Tim Chang, Director of Caltech Housing. This meant that house presidents would receive notice 48 hours before the Housing Office removed material deemed offensive, so that houses would have the opportunity to cover the material themselves.

However, the next Monday, April 18, more white splotches

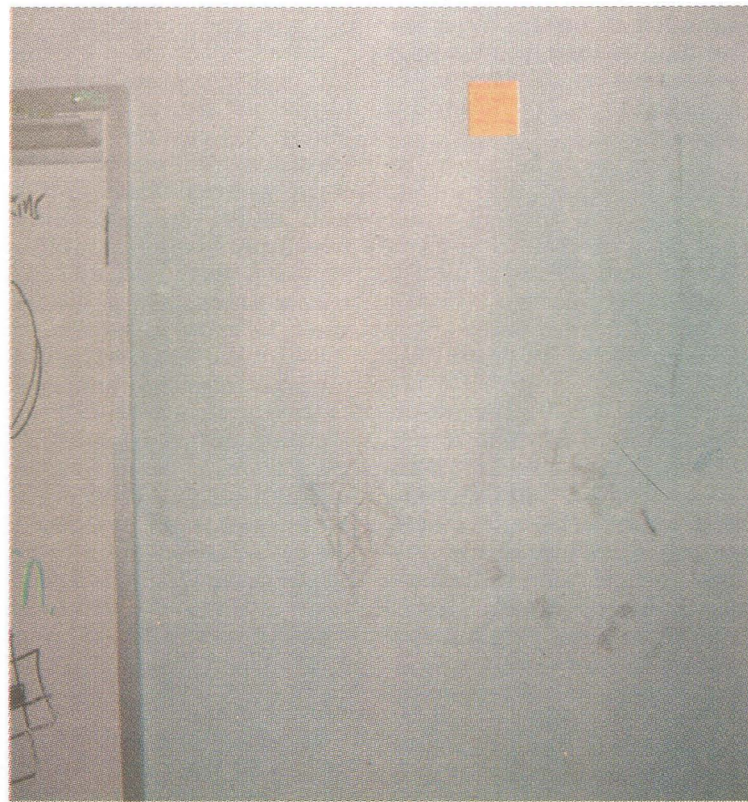


Photo by Adam Craig

In the past this photo could have offended someone.

appeared without warning. Brandi Cossairt discovered five workmen spray painting over obscenities and told them to cease spray painting and to leave Dabney. Another round of talks ensued with various members of Caltech administration.

Students inquired what prompted the purges. While the Admissions Department was taking prospective students and their parents on a tour of the houses, "One parent complained of the offensive murals" in Page House. Noting that these murals were "sexually harassing," Tim Chang felt that "it was our [Housing's] place to take care of [censoring], since students were not doing it."

This explanation dissatisfied some students: "How did it go from a threatened sexual harassment suit to censoring out 'Oh shit, crayons' and 'Buy a coke, damnit!' What sort of incom-

petence is this?" asked Dabney House Secretary Meru Sadhu.

Tim Chang also noted several more general problems concerning the writing and murals. About the Housing Office, he said "It's our responsibility to keep hallways looking nice. The trustees ask why they should give money when the buildings aren't treated nice. [sic]" He also noted that "people from my office can lose their jobs if [offensive material] is not attended to."

When asked why students in other houses were not notified in advance, he responded that his staff was "overzealous" and had taken the chance to be proactive.

Margo Marshak lamented the lack of conversation before action: "Clearly something went wrong." She added, "I think students and the administration can reach an equilibrium given the outside pressures." When asked

## Prof. Chris Brennen Receives Feynman Prize in Teaching

By MENG-MENG FU

The production: Guys and Dolls. The cast: a motley jumble of students and faculty. Enter: Professor Jenijoy La Belle as the Cuban nightclub dancer, Professor Harry Gray as Harry the Gambler, Professor Richard Feynman as a bongo drum player, and Professor Chris Brennen as the Irish policeman. Long ago, Caltech students put on an annual musical and invited select faculty to attend. They approached Brennen to take the role because of his natural Irish accent and his past experience in theater.

Professor Chris Brennen is this year's recipient of the annual Feynman Teaching Prize, one of the most distinguished accolades awarded to faculty at Caltech. Brennen credits his teaching skills to a natural aptitude for theater and the Irish

tradition of storytelling. Growing up in a small Irish village, Brennen did not always know that he wanted to be a scientist or an engineer. His father was the local doctor and everyone expected that, as the eldest, Brennen would also grow up to be a doctor.

As a child, Brennen loved learning about how things worked. He loved building things, such as model airplanes and radios. He loved taking things apart even more. Once, Brennen's father reprimanded him for being unable to piece back together his father's prized lawnmower. But it was not until high school that Brennen discovered his natural aptitude for math and science. In particular, he credits his math and physics teachers for inspiring him to go into science. Brennen's

math teacher, Mr. Gwilliam, was "inspirational in the way that single-minded people often are" and Gwilliam's devotion to mathematics resonated with Brennen's own innate tendency for the subject. These two teachers convinced Brennen's father that his son was likely to succeed in science and even had a high chance of attending Oxford University.

Not only did he attend Oxford; he later earned his masters and Ph.D. there as well. When he first arrived in Oxford from the Irish village where he grew up, he described the culture shock as bigger than that of a Mississippian coming to Caltech. Brennen credits Oxford with giving him an education outside of academics, it was there that he in-

Continued on Page 8, Column 5

teracted with all types of people and "experienced a wide range of cultures, philosophies, and ideas". After Oxford, Brennen worked in a British government lab in London, where he met Professor Ted Wu of Caltech. The two struck up a lively conversation, and, about a month later, Brennen received a letter in the mail offering him a one-year postdoctoral fellowship at Caltech. Brennen came and has been here ever since.

During his time here, Prof. Brennen has frequently sallied forth into the maelstrom of student life by serving as MOSH, Dean of Students and VP of Student Affairs. The conference room on the third floor of the Center for Student Services even bears his name. For Brennen, the easiest part of those jobs was interacting with students. His favorite thing about undergrads is their honesty. In controversies such as the Ricketts bonfire, Brennen has always felt that students remained truthful. He believes that "truth and learning depend on honesty; you cannot build an education



## Women in Science: Fact or fiction?

By JONATHAN MALMAUD

According to Dr. Charles Vest, the former president of MIT who just stepped down after 15 years of diligent service, they are a fact. His talk last Wednesday, titled "Women in Science and Engineering: Personal and Institutional Journeys, Obligations, and Opportunities," inspired a room full of female Caltech scientists to continue their careers in science and some Caltech males, including Dean Revel, to nod in sage agreement.

Dr. Vest began his talk by assuring the audience that he thinks of people, not numbers, a rare trait in a mechanical engineer like Dr. Vest. The rest of the talk, however, was mostly a collection of quantitative tables and graphs showing that he remains an engineer at heart.

In 1980, MIT's undergraduate school was about 20% female. The graduate school was 15% and the faculty, 5%. Today, the numbers are more like 45% female undergrad, 25% grad, and 15% faculty. How have such shocking increases occurred? They all sprang from one developmental biologist named Hopkins.

A tenured professor of biology at MIT who avidly declared herself not a feminist, Hopkins eventually started to notice her male colleagues receiving more institute resources and respect. She wrote a damning letter about the gender inequality that all but one tenured woman faculty member later signed. Vest says the letter disturbed him so deeply that he called a meeting of the presidents of the top nine universities in the country to decide how to fix the problem. They agreed on a general policy of taking women more seriously in academia, reportedly resulting in a 2% growth in female faculty per year. Eight of those top nine colleges now also have approximately 50% female undergrads.

The grad school situation remains bleak. Although women make up 45% of the life sciences PhD candidates and are likely to overtake men if the trend continues, they are still only 30% of the physical science candidates and a paltry 20% of the engineering grads. Overall, women make up only 20% of tenured science faculty in the US.

I asked Vest to explain why the percentage of women in undergrad is so much higher than in grad school. He explains that this is because universities handle undergraduate admissions centrally so that affirmative action policies are easier to implement. In contrast, the decentralized graduate school admissions process allows professors to evaluate candidates independently of each other, so it is impossible to plan a specific girl-to-boy ratio in the admittance pool. Thus the rise of female levels in undergrad school is rather artificial and so does not carry into grad school, where the admittance system is closer to a "true meritocracy," as Vest calls it. Vest seemed to partially justify MIT's affirmative action policy by asserting that for a girl must overcome more obstacles than a boy to attain the same test scores, GPA, and other qualifications and so is more deserving of admittance.

The problem then is to figure out both why fewer women apply and why fewer gain admittance to grad schools. Vest believes the problem starts in K-12 education when societal influences discourage girls from the scholarly at-

titudes necessary to succeed in academia. According to him, we cannot wait for reforms to K-12 education and must begin today by filling the undergrad-grad and faculty pipeline with more women and putting women faculty into more important positions as senior administrators, lab heads and even school presidents.

Indeed, when Vest resigned, MIT appointed a female president for the first time in the school's history. Princeton also now has a female president who has granted tenure to a record number of female faculty, drawing criticism from many. Since 1994, MIT has appointed thirteen new female science and engineering administrators for a total of fourteen.

I also asked Vest about his eventual goals for general equality. Instead of wanting 50% of all engineering faculty to be women, as many feminists desire, he claims to only want to remove barriers to gender equality and then let the percentage assume whatever value it naturally will. Ultimately, even undergraduate admissions committees, who usually choose a 50% ratio before even looking at the applications, could apply this philosophy.

At the end of the talk, though, Baltimore gave Vest a parting gift: a single T-shirt with "MIT" written on the front and a message not at all favorable to MIT on the back. Vest responded, "I'll open it but I won't wear it." Baltimore then suggested that Vest frame it.

## Caltech ACM Team Tries Really Hard

By CHRISTINE CHANG

With participation from over 1,582 universities from six different continents, the Association for Computing Machinery International Collegiate Programming Contest allows the leaders of technological education to face each other in direct competition. Junior Zhihao Liu, sophomore Po Ru Loh, and freshman Hwanseung Yeo represented Caltech in the 2005 ACM-ICPC World Finals at Shanghai Jiao Tong University from April 3 to April 7.

"It was exciting. Going to an international competition combines the thrills of traveling abroad and competing," said Loh.

At the competition, Liu, Loh and Yeo competed against teams from 71 countries worldwide. They placed 29th, whereas the host team from Shanghai Jiao Tong University won the top spot. This year, teams from Asia and Europe dominated the competition.

"We felt we could have performed a bit better, but I was extremely impressed by the ability of the teams from other countries. Even at our best, the top several teams would've been unbeatable," said Loh.

Coach Ben Brantley agreed that the international competition was extremely tough.

"Some countries put focus on the ACM competition," said Brantley. In countries such as China, the competition is part of the curriculum and helps determine a person's admission to certain schools.

Caltech won a spot in the inter-

## Housing Protects Virgin Eyes of Prefrosh

Continued from Page 1, Column 3

who should be in charge of restricting student expression on the walls, she suggested "something different such as the stewardship committee [currently being formed] to make compromises with sensitivity to students, alumni" and others. No such committee currently exists, and the future protocols for determining offensive material will be discussed at the next IHC meeting.

After both rounds of spray painting, various profanities and anti-censorship statements re-appeared. \* "How does Housing have time to go search for profanity but not to fix broken lights and showers in the meantime?" asked Valerie Syverson, a sophomore member of Dabney and Blacker Houses.

Ricketts House President Arturo Pizano noted that the Housing office had, as of April 21, started giving 48 hour warnings. Housing notified him of an offensive sketch and demanded that Ricketts remove it.

Looking to the future, Margo Marshak stated "I hope we can get to a state where this is about dialog and not just warfare between the sides."

## Geneticist Ed Lewis to be Honored in Ceremony Tuesday

Continued from Page 1, Column 1

cerning nuclear-weapons testing policy.

Born May 20, 1918, in Wilkes-Barre, Pennsylvania, Lewis as an adolescent became interested in the genetics of the fruit fly *Drosophila melanogaster*, which was already being touted as an excellent animal for research by Caltech's Thomas Hunt Morgan. Lewis performed genetics experiments on *Drosophila* while just a freshman in high school, and after taking a bachelor's degree in 1939 at the University of Minnesota, came to Caltech for a doctorate and remained at the Institute for the rest of his life, save for the four years he spent in the U.S. Army Air Forces during World War II as a meteorologist.

Lewis published several research papers while still a college student, and soon after the war was a recognized expert in the field of fly genetics. Returning to Caltech in 1946 as an instructor, he was named an assistant professor in 1948, earned tenure the following year, and became a professor of biology in 1956. He was named the Thomas Hunt Morgan Professor of Biology in 1966 and retained the chair until his retirement from active faculty duties in 1988.

"Ed was the bridge between the pioneers of *Drosophila* work—Morgan, Bridges, and Sturtevant—and modern developmental biology," says Baltimore, also a Nobel Prize-winning biologist. "Ed saw that even a lowly fruit fly could be a key to understanding the mysterious process of how a fertilized egg turns into a fully developed organism."

The public is invited to the weather-station dedication ceremony. WeatherBug school representatives will also be on hand for the event.

of the ACM contest allow each student to compete in the international competition only twice, the Caltech team is always searching for talented new participants.

Once the coach determines the top team, that team has few formal practices together. Rather, each student practices individually and often participates in individual competitions, such as Topcoder. In addition, this year the team was able to practice with a team in Russia over Spring Break.

In addition to the actual competition, the team attended various cultural events and tours.

"They try to give a world perspective. It is a lofty goal, and in some way is achieved," said Brantley.

While in Shanghai, Loh, Liu and Yeo were able to explore the city and see its sights.

Google and Symantec, and the Caltech computer science department pooled their resources to fund the team's valiant efforts.

## ASCIT Minutes April 21, 2005

By PARVATHY MENON

**Present:** Michelle Wyatt, Warner Leedy, Peter Foley, Todd Gingrich, Kelly Lin, Parvathy Menon, Dima Kernasovskiy, Meng-Meng Fu  
**Guests:** Chris Wetzel, Matt Walker, Gustavo Olm

Call to order: 5:06pm

### Money Requests

1. Chris Wetzel explains that the Newman Club is geared towards Catholics on campus and has 20 active members. BBQs, supplies, field trips for \$\$\$, funding request to be considered with other clubs during Budget meeting.

2. Gustavo introduces KELROF, a continuous 24 hour relay race. He requests \$200 for food, T-shirts, no entry fees, and trainers. This is also funded by Caltech Y, GSC, and Campus Life. Last year had 30 participants... plus spectators - Vote: 6-0-0 in favor of \$200 to KELROF

3. Matt requests Tang Soo Do Club funding - last year ASCIT gave \$450 club. This year, \$700 requested - Caltech hosting tournament this year (Oct 1<sup>st</sup> - all of SoCal invited) - BoD suggests perhaps request additional funding again in fall.

### Other Business

4. Dr. Tom "The One" Apostol walks by on the Olive Walk. Pause. And revere.

5. ASCIT, IHC, and ARC Committee Appointments: Look out for sign-up sheets everyone... and all ya'll: sign up.

6. Donut Web site updates to occur soon.

7. Bylaw updates: Need to schedule a block of time to review potential changes.

8. Michelle wants to send Collaboration policy worksheets to all profs before 1<sup>st</sup> term next year to encourage use.

9. Meng-meng wants to try to get new CRC committee to be made up of a rep from each house.

10. Staff awards: Todd to figure out what to put in gifts.

11. Kelly asks about mods and SAC cleaning. SAC needs to be cleaned out mostly (jam room, studio) can continue until Commencement though it is recommended that the SAC be cleared in the next week. Dima asks Mannion for SAC 33 storage.

Meeting adjourned: 5:36pm

Oh oh oh... What's love but a second-hand emotion.  
Parvathy Menon

## The California Tech

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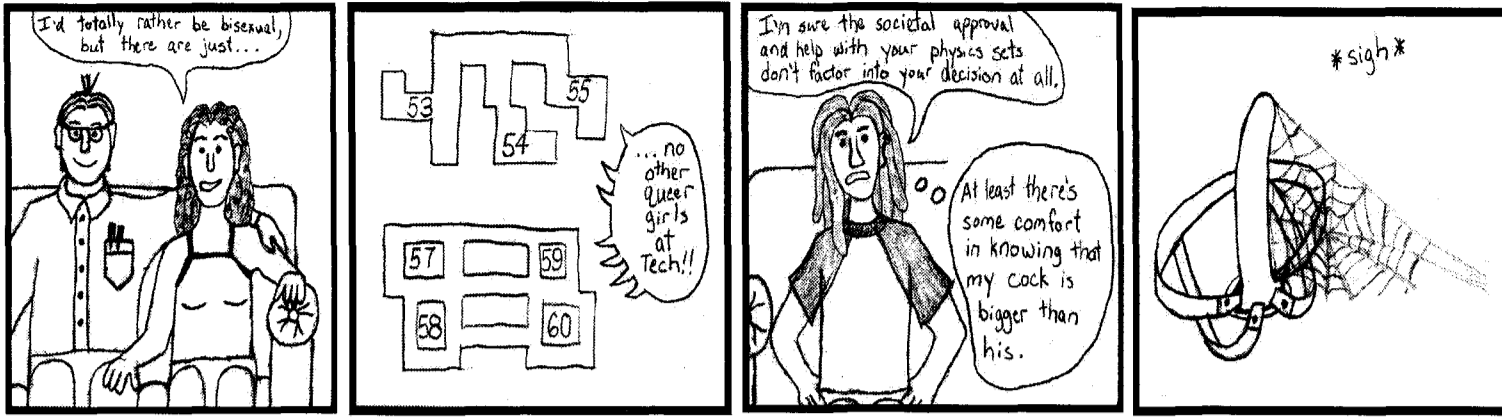
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Bitter Caltech Lesbian

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remind us of the human decency so often lost in this soul-parching wasteland we know as campus. It is your duty to reward the benevolence of these angels with acclaim and gratitude. Applaud her cheerful nature, but not literally. Instead, use your clapping to distract an innocent bystander while a friend moves into position for a flying tackle.

Unfortunately, tackling will get you nowhere with a cruel, bellicose secretary, one who is already having a bad day, refuses to help you, and does not like you. Direct confrontation will only deepen her disdain for you, as will complaining to your prof; he probably fears her as much as you do. A prof without a secretary is like Darth Vader without a mask: pasty, shriveled, dying exposed, outside of his protective shell.

A frosh, whom I will call Not-Tim to protect his innocence, complained of this unhelpful type of secretary in the similarly obscured Not-Math department. She chewed off his head over changing his Not-Math section.

It is quite possible that this secretary encounters for days at a time no one but sullen Not-Mathematicians who tactlessly demand her attention; that can wear down even a cheerful person. So when you encounter an intractable secretary, take a deep breath and put on your best smile. Force a smile. Think about the candy the nice secretary gave you. Think about porn if it helps, but make sure you do not put on a creepy, I-like-porn smile. Try to endear yourself to her. If all else fails, bring her candy for a change; even the most powerful of secretaries is susceptible to thoughtful bribery.

Like it or not, we Techers owe the secretaries here our respect. Your prof can lecture all he wants, give you problem sets that make you cry, and force his TAs to dance like puppets on a string, but you can take heart in the knowledge that, at the end of the day, your prof relies on a secretary for everything else, from flight plans to class lists to the location of the reading glasses perched atop his head, so get on a techretary's good side; you never know when one might come in handy.

Techretaries

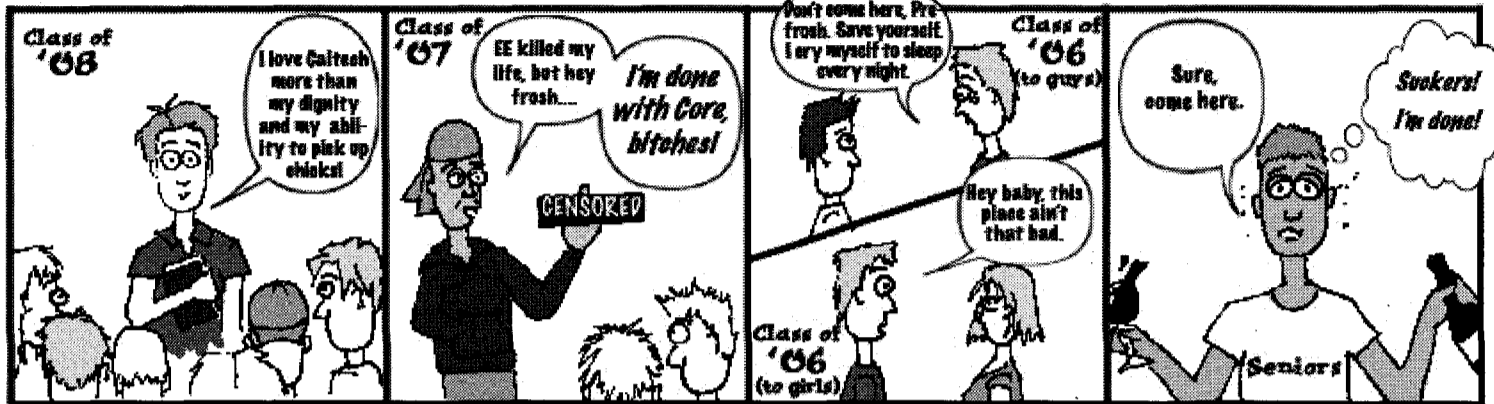
By JEFFREY PHILLIPS

Prof's at Caltech loath dealing with the world as much as than Techers do. While we Techers must deal with the practicalities of every day life or, more often, lose track of them in our academic malaise, profs have secretaries. The rest of the world began calling them 'personal assistants' in the mid nineties but, as Caltech remains a bastion of resistance against the forces of politics, grade inflation and the notable charms of the fairer sex, the word 'secretary' still persists here. Do not let this antiquated term fool you, though; a Caltech secretary wields far greater power than any personal assistant I have yet encountered.

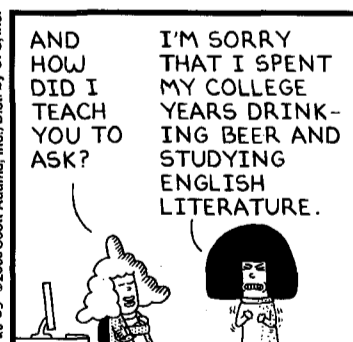
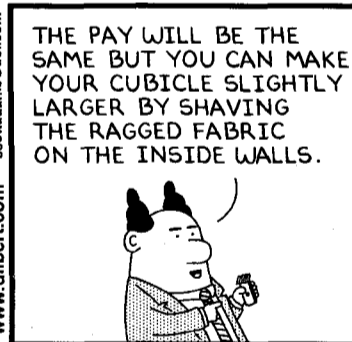
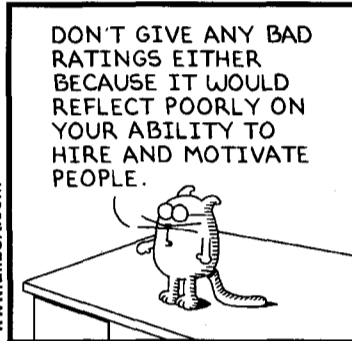
Secretaries at Caltech derive their power from the little-discussed fact that most profs are just as scatterbrained and work-obsessed as the Techers they instruct. Consequently, profs cede most of their worldly power to their secretaries. Whether you need to make an appointment with a prof who never checks his e-mail, need a key for your new lab, want a signature without a conversation with the prof, need to figure out where your last SURF check went or just need to switch sections, the secretary can become your best friend or your worst enemy.

Blessed are the kind secretaries, the ones who keep their desks stocked with candy, who smile at you and try to help you find what you need in spite of your not having combed, let alone showered, in days. These rays of sunshine

Pre-frosh Weekend in a Nut Shell



Story by: Isaac Garcia-Munoz  
Art by: Chelsea Sharon



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**Midterms Week: Good Luck!**



# Prefrosh Weekend Photos

BY MICHAEL CHANG



Dinner at Lloyd



Club fair, Caltech Hillel booth.



Prefrosh hanging around Lloyd courtyard after Capture the Flag



Casino Night in Fleming



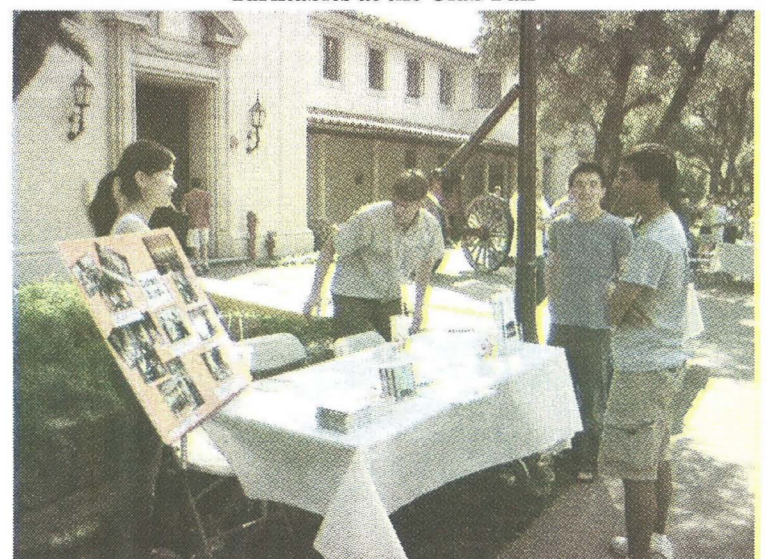
A Capella at the Club Fair



Turntables at the Club Fair



Patrick Hummel playing several prefrosh and Techers in chess simultaneously



Club Fair, Caltech Concert Band booth





The Club Fair

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Gates Patio,  
near Dabney  
Lounge



Nolan Shaheed is a trumpeter  
who has played with Miles Davis,  
Marvin Gaye, Stevie Wonder and  
Count Basie.



## Communication is a 2-way street

By GALEN LORAM

Those of you who know me or have dealt with me more than once or twice know that I would ramble profusely even without last issue's invitation to use the Tech as my soapbox. But take heart gentle readers, for what is amusing if a 6'3" guy dressed in black perched atop a huge, bright pink soapbox with "The California Tech" written in girly script across it is not.

So, although I am not president anymore, this article concerns a topic on which I meant to but never did write during my presidency. The point of the article is at the end, so, while I strongly encourage you to read the whole text, if you only read part of it, skip to the last few paragraphs.

Contrary to my loquacious nature, during the second half of my term I wrote only two articles at most. Yet, if I had decided to scribble more than one article a week, you guys might have been glad of Tom Fletcher's weekly articles. Instead, I remained silent.

The main reason was I did not know what you wanted to know. You all think that it should be obvious. There are always things happening, things that are irking people, things that are on people's minds. Right now the cause de jour is the vigilante spray-painting that housing purportedly undertook to censor content that it deems inappropriate or offensive in the south houses, mainly Ricketts and Dabney. Before that the tuition hike raised students hackles. House Renovations remains a big topic. So it seems like there should be tons about which to write at any given moment.

Even so, it is easy to know what is going on with respect to something and to just assume that everyone else does to. As fallacious as that reasoning is, it still managed to hold water in my mind and, I imagine, in the minds of past and present IHC Chairs, BoC Chairs, ASCIT Presidents, and House Presidents. I now find it hard to imagine what it feels like to not be in the loop, even if I can tell you now how it feels.

This is one of the big reasons why BoD and the rest of the students have problems with communication. When I sent out the emails that made it around to most and hopefully every house a few months ago asking for your criticisms of student affairs, it all came down to communication. We got the galling "Caltech has raised a billion dollars" right next to "your tuition is going up." When the administration explained it, it made sense to people: according to an unknown yet oft-quoted source, tuition covers around 40% of the cost of being a Caltech student. If we were to scrap tuition, we could not get money from other sources. They would say, "Oh, you have so much money that you don't need our money: you don't even charge tuition!" We still pay \$10,000 less than our peers for a strikingly similar education quality. We draw on the endowment based on a three year average and are just now bottoming out of it. You have heard all these reasons since the protest, but no one explained them at the time, so people were justly angry.

People were angry at the lack of good communication. This was in part my fault, as I was not only on the Scholarships and Financial Aid Committee that makes a recommendation for tuition but also

was the head of ASCIT. Student Affairs and Business and Finance could have done a better job too, but we all have to learn somehow.

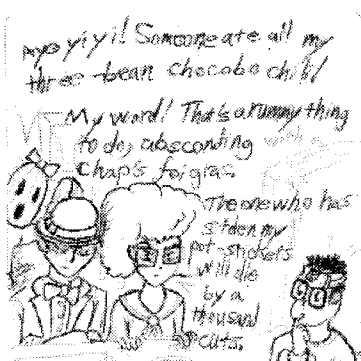
On the other hand, communication is a two-way street. Communication does not just go from leaders to everyone else. Communication needs to have built in feedback. This means that you have to ask Warner or Peter to write an article on something that concerns you. I only got two inquiries during my entire term from non-ASCIT people to write articles. When we learn that people want to know about something, we happily share. If you want housing to communicate better, you must talk to them. Going to the student affairs open houses every Wednesday from 4-5 is a great chance to meet some of the people who are making decisions. If they know students better, they better understand student concerns, which can help them make better decisions.

Knowing that people care encourages elected officers to do their best. If no one ever comes and talks to us about what her or his concerns, we just imagine things about which we think people want to hear. We set goals that we think sensible for ASCIT or the IHC or student affairs or whichever group of which we are in charge or with which we work, but they may not be the best goals. Getting feedback from the dues raise vote was probably the most helpful thing for me during my term. If you guys would just come and talk about what you want to hear though, it would be so wonderful. I promise we do not bite, at least not the first time, regardless of what my shirt says.

Student Affairs is doing its part by starting up these open houses, so do your part by going. Dima, the social director, is coming up with all sorts of cool events, and putting more time and energy into them than I have seen in years: give him ideas and suggestions or even volunteer to help plan them. Since Warner and Peter have brought ASCIT and the IHC closer than they have been in years, go talk to them about your ideas for how they could better the campus. The IHC deals with the Freshmen in Avery situation and how to make it a better experience for the whole campus, particularly those frosh who will live in Avery. Talk to your house president about your thoughts on how to make the transition as smooth as possible.

Above all, voice your thoughts; let everyone know what you want to know, and the machine that is Caltech will work a bit smoother.

## COMIC



## Student Faculty Dynamics or How I Learned to Stop Worrying and Love the Ombuds

By MENG-MENG FU

*Errata: In Alex Siegel's article on the SFC in last week's issue, he referred to the SFC as biennial, occurring once every two years. Rather, it is semi-annual, occurring twice a year. Also, the editor accidentally attributed a second copy of Alex Siegel's article to Meng-Meng Fu. The following is the commentary that Meng-Meng Fu wrote that week.*

This past Tuesday, students and faculty gathered at the biannual Student Faculty Conference. Twelve committees presented their findings on curriculum, quality of life, and Honor Code. Though many committees discussed issues that were specific to individual departments, four issues arose repeatedly among several committees.

1. Student-faculty interaction outside of the classroom:

Many committees suggested a social hour for faculty and students to get together. Similar events already exist in most departments for graduate students. It should be feasible to organize similar events for undergraduates or simply to invite us to pre-existing socials. For example, the GPS faculty invites undergrads to regular socials. Even so, it also behooves students to follow our high school guidance councilors' advice by taking initiative. Several students are starting an EASY Students Club, E&AS Young Students Club. The club plans to encourage student-faculty interaction by hosting cookie hours for students and professors. Contact Rachel Maire (rmair@its.caltech.edu) to join.

2. Course feedback:

Many committees complained of being unable to communicate with professors about classes that are in session. Talk to them. Most professors are benign and would probably welcome advice from and interaction with students. For example, I am currently taking Ch3b, a lab course. I complain a lot. But I noticed that other people in this class were complaining too, so I asked the course instructor if I could be the course ombudsperson, and she said yes. Telling the ombudsperson is a great way to complain anonymously.

Also, at the end of the term, many departments distribute course evaluations, but many students do not bother to respond. Fortunately, students can now download TQFR's Teaching Quality Feedback Reports, for all core courses from the registrar's website. In the future, TQFR's should be online for all classes, making course evaluations more accessible for us and more easily interpretable for professors.

3. Teaching assistants:

Some committees brought up the lack of interest and enthusiasm of many TA's who must teach

recitation sections in order to fill requirements. Sometimes, TA's even admit that they know nothing of the topic that they are teaching. Some professors realize the dearth of committed grad TA's, but some remain oblivious to TA's who are doing a pitiful job. A group on campus, the Caltech Project for Effective Teaching, works to provide better training to graduate TA's. Check out their website at [www.its.caltech.edu/~ta](http://www.its.caltech.edu/~ta).

In the long-term, departments must reevaluate at how they select TA's for courses and could even institute some type of positive or negative reinforcement. For instance, several SFC committees suggested choosing undergraduate TA's who have already taken the courses they are to teach. In the short term, you can attack the problem by informing your professors of these deadbeat TA's and by generously awarding F's on TA evaluations.

4. Course organization:

Some faculty members remain ignorant of the potential benefits of rescheduling certain courses, as the case of Ma2a, Probability and Statistics, and Ma2b, Differential Equations, aptly demonstrates. Once professors realized that Ma2b coincided with ACM95b, they promptly interchanged these classes. Next year, Ma2a will be by Differential Equations and Ma2b will be by Probability and Statistics.

Within a course, the arrangement of the material can also seem haphazard. Again, the key is communication with the professor. And even if you come up with your suggestions at the end of the term, you should let the professor know for next year.

One way to broadcast your opinion is to contact me at [mfu@its.caltech.edu](mailto:mfu@its.caltech.edu). As the ASCIT Director of Academic Affairs, I will make sure you can talk to someone about academic concerns. You can also contact the Academic and Research Committee reps in all 7 houses and Avery. Check out the roster at [donut.caltech.edu/~arc](http://donut.caltech.edu/~arc). The CLUE is also available online at [donut.caltech.edu/clue](http://donut.caltech.edu/clue); you can access course information, including grade distributions, and make as many comments as you would like.

Overall though, the point of SFC is to defeat the system. We are all fortunate to attend a school with a 3:1 student-to-faculty ratio. Take advantage of it. Most professors are very approachable; most of them even like students and care a lot about our education. Instead of complaining that not all courses have ombuds or evaluations, talk to your professors and get to know them. Their receptiveness to your suggestions may pleasantly surprise you.

## Learning by Teaching

By SIMON QUE

Being an undergrad in the world of math, science, and engineering known as Caltech, I find it easy to take my knowledge for granted. Since I am majoring in electrical engineering, I treat math and physics concepts, such as geometric relations, derivatives, integrals, vectors, forces, and electromagnetism, like black boxes. Ignoring the details of how and why they work, I just look up the relevant equation from my notes or on MathWorld.com and apply it.

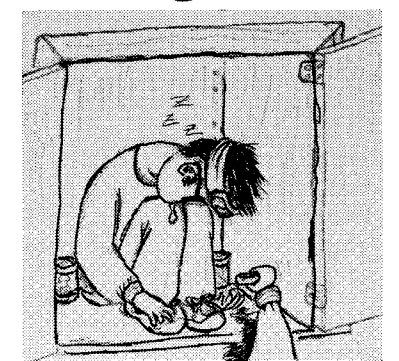
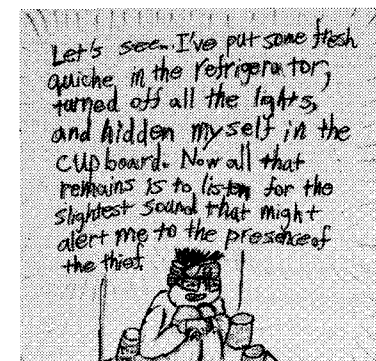
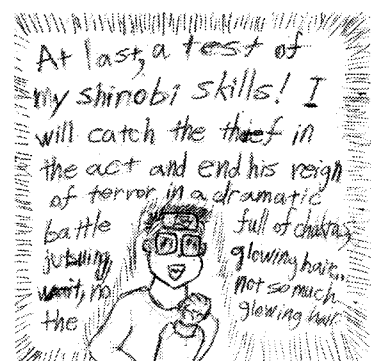
At best, I think of them intuitively. For instance, if I were taking the derivative of a function, I would understand it as the rate of change of something, even though the formal definition is the limit of the change in a function of  $x$  divided by the change in  $x$ , as the change in  $x$  goes to zero. Since completing Math 1, I have left the subtopics of continuity and differentiability for the mathematicians to ponder. Never do I think about these details while doing problem sets. An intuitive understanding and the ability to apply equations usually serve me well enough.

But real tests of how well I have learned those elementary topics often come from an unexpected source: tutoring high school students at the Caltech Y. Many times, the tutees have asked me about the basics of math and science, especially of calculus. In those moments, an intuitive understanding is no longer good enough to explain how and why the derivative determines the slope of a function. The explanation might involve opening the still more basic black box of the limit. That I never fully understood epsilon-delta proofs myself only compounds the difficulty.

Sometimes, I do not even readily know the answer to a question. I must then derive it on paper and present it to the student in a way that allows him to understand it. And sometimes that even means avoiding the use of technical terminology. This type of situation forces me to think hard about something that seems quite basic to me or to think about it in a different light. And, ultimately, I often find that I have gained new insight or perspective on the topic through trying to explain it. At least once, I have even faced a problem that I had seen years ago but had skipped due to lack of knowledge. I had to go back to it and tackle it.

In struggling to teach, I learned that you know that you fully understand something when you can teach it to someone else. And if you have not learned it, the process of trying to explain it becomes a learning experience.

By Adam Craig



# To Our Readers: Egg, Maggot, Chrysallis, Fly, Soar

By ADAM CRAIG, EDITOR

In this issue of the Tech, we present for your perusal photographs of prefrash deciding whether to make Caltech their first foothold in the steaming heaps of Academia, reflections from current students on the quotidian struggles over self-expression, academics and bureaucracy, praise for students who have not only pulled themselves through to the top but have made the extraordinary unguilations necessary to reshape the pile itself for the better, accolades for the secre-

tararies who shovel more every day than one can should ask of any human being in a lifetime, a celebration of the ongoing flight of Professor Brennen, who will hopefully dizzy us all with his academic barrel rolls and hair-pin turns for years to come, and a final send-off for Professor Lewis, who who weaved through the swats of war and winds of change and soared through awe-inspiring acrobatic maneuvers not just as a scientist but as a human being. May he forever alight

upon the flower of our collective memory and sip the sweet nectar of his eternal reward. I only met Professor Lewis once, my freshman year when I was trying to find a Professor who could identify a fly I caught. The world will remember him for many reasons, but I will mainly remember him as the kindly older scientist who set aside his flasks of bugs in brown goo to refer me to an especially helpful tome with which I identified it as a citrus fly.

# MINT'S

## Bill Nye the Science Guy Skeptics Society Lecture

Germs, germs, everywhere! We live with them all day, every day. Did you know that: Some germs are good for you, or even delicious? There are more germs inside you than there are people on Earth? Your body is constantly fighting germs, even when you aren't sick?

Come hear Bill speak this Sunday afternoon, April 24th, at 2:00 p.m. in Beckman Auditorium, and you'll learn about these things and more. Find out about germs and how to stay healthy in this delightful presentation based on his new book, as well as a few new things from Nye Labs <http://www.billnye.com/>. Bring the kids, and the kids' friends, for an afternoon of science and a blast of fun!

General admission tickets for this event are \$12 (\$8 for Skeptics members; \$5 for youth under 18 and for those with Caltech/JPL ID).

## Summer Work Study

Information and applications for 2005 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, 2005. Your entire financial aid application must be complete by June 1, 2005 in order to be considered for Summer Work Study. If awarded, the work study funding will begin July 1, 2005.

## Mathematics Department Prizes

The Mathematics Department is pleased to announce two categories of prizes to be offered again this year to Caltech undergraduate students.

1. The E.T. Bell Undergraduate Mathematics Research Prize --- A cash prize of \$500 awarded for the best original mathematics paper written by a Caltech Junior or Senior. Contestants must be nominated by a faculty member familiar with the work. If the entry is sufficiently worthy, the faculty member will nominate the contestant and act as sponsor. Each student is entitled to only one entry. All contestants nominated must submit their papers in final form to their faculty sponsors by the sixth week of the term (May 6). A faculty committee will judge the papers and announce its decision before the end of the third term. The committee may award duplicate prizes in case of more than one outstanding entry. The winning name(s) will be included in the commencement program in June.

2. The Morgan Ward Competition --- Open to any Caltech freshman or sophomore. Entries may be individual or joint. Each student is entitled to three entries; two may be individual. An entry consists of a mathematical problem with a solution or significant contribution toward a solution. The problem may have any source which should be stated in the entry. The entries are judged on the basis of the nature of the problem, originality, and elegance of the solution. Indicate any outside references used. Entries from each contestant or group must be delivered to 253 Sloan by May 6. The names of the contestant, or contestants, must be written on the envelope only, not on the entry. The Judging Committee will consist of 3 undergraduates. The judges will select a group of finalists and submit their entries to the mathematics faculty who will make the awards. Prizes of \$75 will be awarded for the best entries. Prizes for individual entries will be limited to one per contestant; no group may receive more than one prize.

## The Caltech student chapter of SIAM presents:

"Scientific journals: Problems and Trends as the Web turns 11"

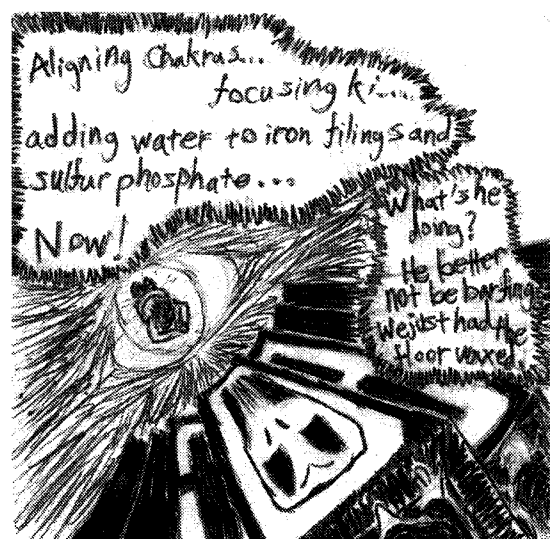
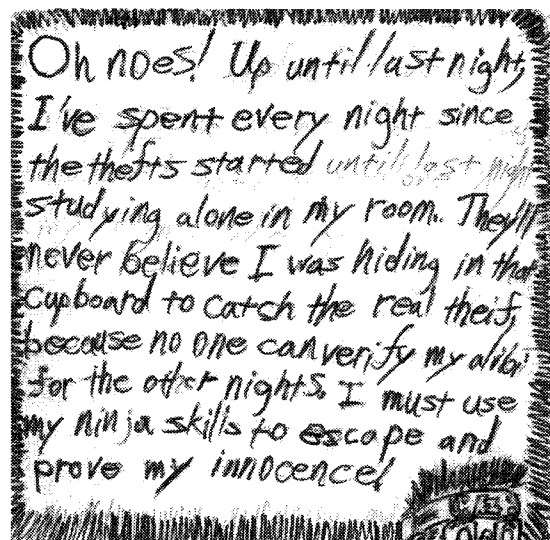
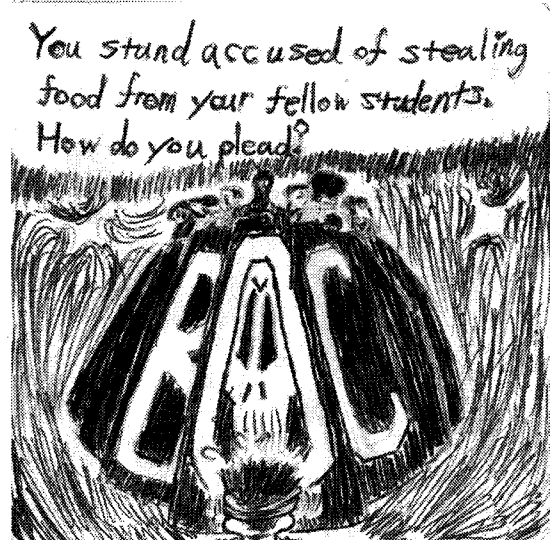
A talk by Kimberly Douglas, Caltech's University Librarian, on thursday

April 28, 4PM, Beckman Institute Auditorium. Refreshments at 3:30PM.

Abstract: Scientific journals provide the primary certification and distribution mechanism for research results and analyses. The research enterprise requires access to all these reports and papers. However, current economics constrain the ability of research libraries to purchase journals, at the same time that the Web opens other opportunities for researchers to share results. Researchers and funding agencies are agitating for change; society and commercial publishers are grappling with pricing and access models; and totally electronic alternatives are springing up within research libraries.

## Fifth Annual Caltech Jazz Festival

The Caltech Jazz Bands are pleased to announce the fifth annual jazz festival at Caltech on Saturday, April 30, from 1-6 PM at the Gates Patio area, just west of Dabney Gardens. This concert will feature the Nolan Sheehy Ensemble, the Caltech Jazz Bands, Big Band Theory, and a seven piece rock/jazz ensemble called "SGS". The intimate garden setting on the Caltech campus will be the location of this free afternoon of jazz. Bring a blanket and some food and enjoy the day. Lights refreshments will also be available for a small fee.



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## Quarterly Research Tip Sheet

By MARK WHEELER

A quarterly review of research at the California Institute of Technology:

### Potential New Approach to Fighting Cancer In mice.

Researchers altered stem cells that make blood to continually generate immune cells that attack and destroy cancer cells and shrink tumors. The work could eventually be used for controlling the growth of tumors in humans.

[http://pr.caltech.edu/media/Press\\_Releases/PR12659.html](http://pr.caltech.edu/media/Press_Releases/PR12659.html)

### Physics Team Invents Device for Weighing a Single Molecule.

The first nanodevice to weigh a single biological molecule may identify specific molecules; for example, proteins secreted in the very early stages of cancer.

[http://pr.caltech.edu/media/Press\\_Releases/PR12669.html](http://pr.caltech.edu/media/Press_Releases/PR12669.html)

### Scientists Discover What You Are Thinking.

Researchers have confirmed that the brain's ventrolateral prefrontal cortex is involved in the planning stages of movement. The work may further the development of a brain-machine interface that will give paralyzed people the ability to move and communicate simply by thinking.

[http://pr.caltech.edu/media/Press\\_Releases/PR12660.html](http://pr.caltech.edu/media/Press_Releases/PR12660.html)

### Test Subjects Caught in the Act of Influencing One Another.

Researchers scanned two brains to see how one influences the other as they interact. The work may lead to new insights into maladies such as autism and schizophrenia.

[http://pr.caltech.edu/media/Press\\_Releases/PR12671.html](http://pr.caltech.edu/media/Press_Releases/PR12671.html)

### The Brain's Remembrance of Emotional Events.

The recollections of the central meaning and details of emotional events are related to specific parts of the brain. A study shows that the amygdala focuses the brain's processing resources on the gist of an emotional moment.

[http://pr.caltech.edu/media/Press\\_Releases/PR12655.html](http://pr.caltech.edu/media/Press_Releases/PR12655.html)

### Eliminating the Bottleneck That Slows Circuits.

A light-emitting transistor could bypass a major bottleneck that slows down electronic circuitry, perhaps leading to dramatically faster computers.

[http://pr.caltech.edu/media/Press\\_Releases/PR12649.html](http://pr.caltech.edu/media/Press_Releases/PR12649.html)

### New X-Ray Telescope Will View Matter.

By the end of the decade, a new X-ray telescope should be orbiting Earth, taking the first high-energy X-ray pictures of matter falling into black holes and shooting out of exploding stars.

[http://pr.caltech.edu/media/Press\\_Releases/PR12644.html](http://pr.caltech.edu/media/Press_Releases/PR12644.html)

### The Eyes Emote.

Neuroscientists exploring a particular region of the brain conclude it's the eye region that we scan when we process information about other people's emotions.

[http://pr.caltech.edu/media/Press\\_Releases/PR12630.html](http://pr.caltech.edu/media/Press_Releases/PR12630.html)

### More Stormy Weather on Saturn's Moon Titan.

Researchers have discovered clouds of methane at Titan's temperate mid-latitudes. The team made its discovery using two ground-based observatories in the months before the Cassini spacecraft arrived at Saturn and Titan.

[http://pr.caltech.edu/media/Press\\_Releases/PR12627.html](http://pr.caltech.edu/media/Press_Releases/PR12627.html)

### Bose-Einstein Condensation of Cold Excitons.

Bose-Einstein condensates are particles, such as atoms, that lose their individual identities at incredibly low temperatures, and coalesce into a single blob. Now researchers have created a sustained Bose-Einstein condensate of excitons, odd particles that inhabit solid semiconductor materials that normally decay in about a billionth of a second.

[http://pr.caltech.edu/media/Press\\_Releases/PR12625.html](http://pr.caltech.edu/media/Press_Releases/PR12625.html)

## Why Denim?

By SAM LAWLER

April is national Sexual Assault Awareness Month. Since 1987, humanitarian organizations and conscientious individuals have made an extra effort every April to spread awareness about the issue of sexual assault, to educate people about violence prevention strategies and healthy relationship skills, and to encourage victims and survivors of sexual violence and unhealthy relationships to seek emotional support and psychological and legal counseling.

To bring such awareness, education and support to campus, this year Caltech will participate in Sexual Assault Awareness Month in two ways. On Wednesday, April 27 Caltech students and staff will participate in Denim Day and the White Ribbon Campaign.

Denim Day: Denim Day is a protest against an Italian Supreme court ruling in 1999 in which the judges decided to pardon a rapist because the victim was wearing jeans. They thought that she must have helped him take her jeans off, which they concluded made the rape consensual and thus not a rape. To protest this extremely misogynistic ruling, women all over the world wear denim on April 27. Caltech will be participating in Denim Day by providing information on how to prevent and heal from sexual assaults.

White Ribbon Campaign: Men are also encouraged to take a stand against sexual assault by wearing a white ribbon. The white ribbon symbolizes a man's promise to never condone, com-

mit, or remain silent about violence against women. The White Ribbon Campaign began in Canada after a man murdered fourteen female engineering students at the University of Montreal in 1989. Caltech students in particular can sympathize with the sentiments of the Montreal ribbon-bearers, because of Caltech's high male-to-female ratio, and because the murdered women were engineering students.

While Caltech is one of the safer colleges in the country for women, Candace Rypisi, Director of Caltech Women's Center, reports that sexual assault and other forms of relationship abuse do affect our students and staff. Unfortunately, shame, self-blame, and fear that rumors will spread through Caltech's small, tightly-knit community sometimes discourage women from reporting or seeking support. Outside the Caltech bubble, however, the realities are still grimmer. Every 45 seconds, someone forcibly rapes a woman in the United States. This is not acceptable. Awareness-building efforts such as these, Rypisi says, help educate the campus on confidential resources, how to help others and, most importantly, how to prevent sexual assault altogether.

Come visit our tables Wednesday at lunch outside the Red Door to find out what you can do to prevent sexual assaults. More information on sexual assaults is available at [lacaaw.org](http://lacaaw.org), or, for campus resources, visit [womencenter.caltech.edu](http://womencenter.caltech.edu).

## Matthew O. Jackson Named Guggenheim Fellow

By JILL PERRY

Matthew O. Jackson, the Edie and Lew Wasserman Professor of Economics at the California Institute of Technology, has received a John Simon Guggenheim Memorial Foundation Fellowship. Jackson is one of 186 fellowship recipients, who include artists, scholars, and scientists.

Jackson's research focuses on modeling the collections of relationships between individuals, called social networks, in an attempt to understand phenomena as diverse as friendships, computer virus transmission, and employment trends. Through developing these models of social networks, Jackson hopes to understand how specific patterns of social relationships arise, how group behaviors can be predicted, and how relationships could be made more efficient inside a group. One application of interest to Jackson is modeling labor markets with respect to socio-economic back-

ground. He seeks to answer questions about how an individual's background influences employment and wage prospects. Social network models may also provide insights into possible policies to alleviate unemployment among specific socio-economic groups.

The Guggenheim Fellowship will help fund Jackson's research while he is on leave at the Center for Advanced Studies in Behavioral Sciences (CASBS) in Palo Alto for the 2005-2006 academic year. While at CASBS, Jackson will examine the diffusion of information through social networks and how it affects behaviors, in particular voting behaviors.

The John Simon Guggenheim Memorial Foundation has granted \$240 million in fellowships to over 15,500 individuals in the arts, humanities, and sciences, since 1925. Past Guggenheim fellows include Nobel laureates and Pulitzer Prize winners.

## Brennen Lauded for Raw Teaching Prowess

*Continued from Page 1, Column 2*

without honesty". Brennen is also a big fan of student self-governance, the Board of Control, and students' genuine care for one another.

Most of all, Prof. Brennen truly enjoys teaching. He communicates his ideas so well that one student has commented, "Prof. Brennen could teach fluid mechanics to a cat." Brennen approaches his classes from the perspective of the student who is seeing a subject for the first time. His goal in class is to impart to students an appreciation of the beauty of fluids and an understanding of the mechanics that lead to it. Brennen also has an intense interest in and affection for his students and admires their "youth, spirit, idealism, and marvelously fresh intelligence." He finds teaching immensely rewarding, especially when students express "that look," signaling understanding. He describes a good class as a real high, something that gives him an energy boost for the rest of the day.

It's no surprise to his students that Prof. Brennen received the Feynman Prize. Former student Kayte Fischer comments, "Professor Brennen deserves to win not just a yearly teaching award but a lifetime teaching award. Not only is he an awesome professor ... he has also been consistently involved in and supportive of the undergraduate culture at large. I have seen him rolled down the Olive Walk in a grocery cart on Ditch Day, and I know he routinely used to ride a bike into the pool behind Steele House." Indeed, in his years as the MOSH, Brennen would participate in underwater bicycle races while dressed up in a suit and tie.

The award took Brennen himself completely by surprise though. Prof. Melany Hunt convinced him to attend a faculty board meeting under the pretense that a student was to meet him there. Brennen sensed something fishy but was wonderfully astonished when he was awarded the Teaching Award. He considers it a great honor to receive an award with Feynman's name on it. As a young professor, Brennen learned from Feynman that a teacher is "not just someone who communicates information, but is someone who inspires others to wonder," a lesson Brennen now motivates colleagues to learn.

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