



D. Kortz/The California Tech

A pumpkin smashes to the ground in front of Millikan Library during the Annual Halloween Pumpkin Drop. After being frozen in liquid nitrogen, the pumpkins are obliterated by the fall from the campus' tallest building.

Affordability in Higher Education Act To Solve Dubious College Cost Crisis

By CHRISTINE LEE

Despite all the higher educational institutes' effort to give out scholarships and all sorts of aid to students, many students still cannot afford the costs of college. According to "The College Cost Crisis" cost factors prevent 48 percent of college-qualified high school graduates from attending a four-year institution and 22 percent from attending any college at all.

"The ongoing college cost explosion is a disturbing trend and one that cannot be allowed to continue," says the report, which was prepared by Rep. John A. Boehner and Rep. Howard P. "Buck" McKeon.

So what is the problem? According to the report, the federal government has already increased its spending on higher education. The Pell Grant, which is student aid given based on financial need that students need not repay, have increased dramatically over the years and "made the dream of college a reality for millions of students."

Moreover, while the Consumer Price Index increased by 30 percent in the 10 year period ending in 2001-2002 and median family income increased by 40 percent, federal student aid increased by 161 percent. There is no question, there-

fore, to how much the federal government has contributed to higher education.

Consequently, the arrow is pointed at the academic institutions themselves: "The Commission finds itself in the discomfiting position of acknowledging that the nation's academic institutions, justly renowned for their ability to analyze practically every other major economic activity in the United States, have not devoted similar analytic attention to their own internal financial structures."

In short, the document holds the colleges responsible for wasting spending and hence the rise in tuition: "To compete in cutting-edge science and technology fields, for instance, universities are shelling out millions for research facilities."

In the end, the article reasons that increase on federal spending on education is not the answer to the problem, instead, that the college should be held responsible for dramatic tuition raise. Having identified the source of the problem, Rep. Howard P. "Buck" McKeon (R-California) launched the Affordability in Higher Education Act on October 16th. This highly anticipated bill proposes to "empower the consumers of high education—student and

parents—with significant information on higher education and hold colleges and universities accountable for the dramatic cost increases that are hampering our nation's ability to make the dream of higher education a reality for needy students." The major points addressed are summarized below:

1. "College Affordability Index": An index by which the consumers of higher education can understand and compare tuition increases in real terms. The College Affordability Index is simply determined by comparing tuition and fee increases over a three year period to increases in the rate of inflation over that same time period.

Using data already being reported by colleges and universities, the

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Tacit Production Pleases; Acting, Props Delightful

By JENNY IOFINOVA

Melodrama is definitely the one word to describe *Sweeney Todd*. In fact, I knew that to be the case because it was the fourth word in the Director's Notes in the program, staring at me in 20-pt. font.

Truth is, *Sweeney Todd*, as penned by C. G. Bond, is not exactly a melodrama, but this production sure was. Director Robert Parker's flair seems to be for the dramatic and many elements of the play were overdramatized.

For instance, all of Sweeney's murders are done to (dramatic) red lighting. Sweeney Todd (Steve Collins, JPL) read his first few lines with unrealistic gusto. (I was afraid he was going to do that for the whole play, but after the first few minutes it was, on the whole, not that bad).

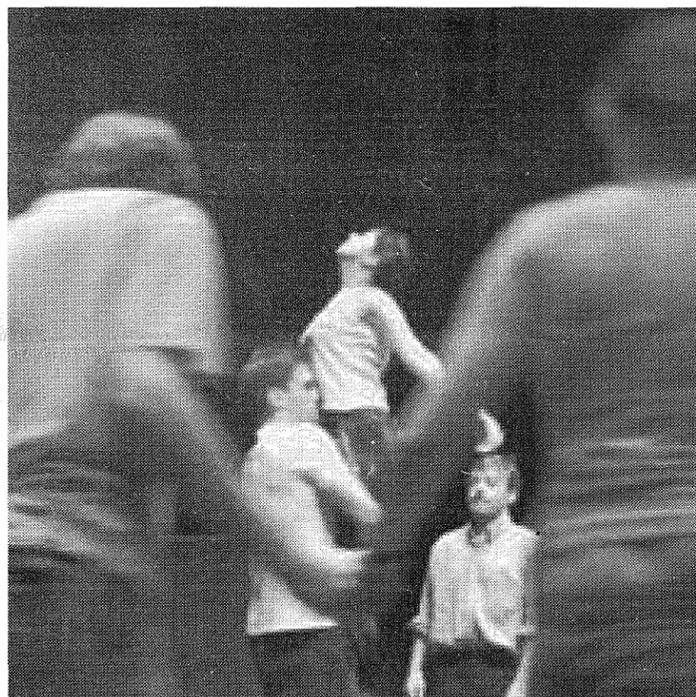
And the "true villain" in the play, Judge Turpin (Dylan Nieman) is

just that: a very convincing creepy, lustful old man. In fact, all the characters except for Sweeney and, to some extent his sidekick Mrs. Lovett (Lynne Cooper, JPL) and his daughter Johanna (Lavanya Vasudevan) are pretty black-and-white.

The story begins with Sweeney Todd's return to London, which he was forced to leave after he was falsely convicted by Judge Turpin, who was lusting after Todd's wife and his sidekick the Beadle (Trevor Roper) and sentenced to be forever deported.

However, Todd escapes and returns to London, where Mrs. Lovett, who keeps a meat pie stand under Todd's barbershop, tells him his wife Lucy was raped by the Judge at a party and thereafter administered poison to herself and Johanna. Lucy died, but Johanna

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Courtesy of pr.caltech.edu

Members of the cast of *Sweeney Todd* rehearse last week in preparation for opening night Friday.

Committee, Baltimore Approve Money For Moore-Hufstedler Fund Proposals

By JENNY IOFINOVA and ARTHI SRINIVASAN

Recently, proposals for the Moore-Hufstedler fund were discussed by a committee and were awarded money. The proposals aim to improve and enrich the quality of student life at Caltech. The accepted proposals vary widely, from improving the Coffeehouse to bringing an artist-in-residence to Caltech on a regular basis, but all of them have the potential to positively impact student life on campus.

The Arts Committee was awarded \$50,000 by the fund to support an artist-in-residence next year. The Arts Committee hopes to have such a program here every two years. For next year, Catherine Wagner, who has exhibits at the Pacific Asia museum and LACMA, was invited. If she accepts the invitation she will come in January and do a mock-up of the Broad building.

Another cultural project is the Moon Festival held by the Caltech Chinese Association every year. The festival is something of a Chinese analog to Thanksgiving. How-

ever, since Caltech has such a large international student body, the Caltech Chinese Association plans to use some of the Moore Fund money to hold a much larger festival this year.

The Social Activism Speaker Series was awarded money in order to bring speakers to Caltech to talk about issues which affect everyone on both global and local levels. The Speaker Series is organized by a group of students and faculty, who work closely with both the Caltech Y and the Peaceful Justice at Caltech group.

The speakers, many of them scientists themselves, are invited because of their dedication to important social struggles. Previous speakers include Dr. Jose Ramos-Horta, a Nobel Peace Prize winner who worked for peace in East Timor, as well as Amy Goodman, host of Democracy Now!, who works for equal rights for all groups, both in the U.S. and throughout the world. During this fifth year of the series, the group hopes to bring more influential and inspiring speakers to Caltech.

The SASS received a grant from

the Moore fund in lieu of the usual contribution from President Baltimore. The money will be used for providing honoraries, that is, compensation for traveling expenses and accommodation (although the latter is often donated by Tom Mannion), as well as a dinner for the guests.

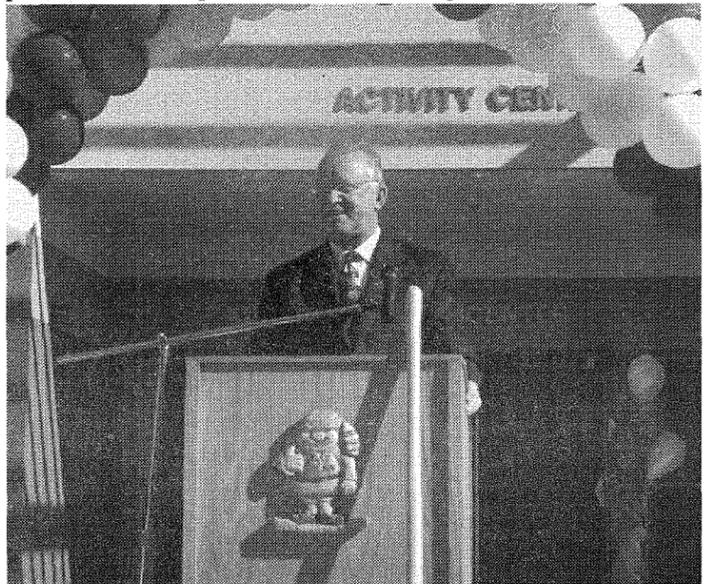
Another event, the Graduate Science Symposium, which will be held on November 11th for all Graduate students, focuses on giving the students a chance to network and present their research projects.

This event is being organized by the Women in Engineering, Science and Technology (WEST) and they hope to not only give the students a chance to share their work, but emphasize the importance of a scientific community that is open to everyone, regardless of gender or race.

The symposium will include two speakers, biologist Frances Brodsky and a keynote address by Shirley Malcom, who will focus on diversity within the sciences.

The Caltech Y applied to get funds for their Alternative Spring Break community service program.

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Courtesy of www.house.gov

Representative Buck McKeon (R-Calif) introduced a bill that effectively institutes price controls on college education.

Atmospheric Researchers Flying High with NASA

By ROBERT TINDOL

Atmospheric scientists still acquire samples the old-fashioned way—by flying up and getting them

Just as Ishmael always returned to the high seas for whales after spending time on land, an atmospheric researcher always returns to the air for new data.

All scientific disciplines depend on the direct collection of data on natural phenomena to one extent or another. But atmospheric scientists still find it especially important to do some empirical data-gathering and the best way to get what they need is by taking up a plane and more or less opening a window.

At the California Institute of Technology, where atmospheric science is a major interest involving researchers in several disciplines, the collection of data is considered important enough to justify the maintenance of a specially equipped plane dedicated to the purpose.

In addition to the low-altitude plane, several Caltech researchers who need higher-altitude data are also heavy users of the jet aircraft maintained by NASA for its Airborne Science Program—a long-standing but relatively unsung initiative with aircraft based at the Dryden Flight Research Center in California's Mojave Desert.

"The best thing about using aircraft instead of balloons is that you are assured of getting your instruments back in working order," says Paul Wennberg, professor of atmospheric chemistry and environmental engineering science.

Wennberg, whose work has been often cited in policy debates about the human impact on the ozone layer, often relies on the NASA sub-orbital platforms (i.e., various piloted and drone aircraft operating at mid to high altitudes) to collect his data.

Wennberg's experiments typically ride on the high-flying ER-2, which is a revamped reconnaissance U-2. The plane has room for the pilot only, which means that the experimental equipment has to be hands-free and independent of constant technical attention.

Recently, Wennberg's group has made measurements from a reconfigured DC-8 that has room for some 30 passengers, depending on the scientific payload, but the operating ceiling is some tens of thousands of feet lower than that of the ER-2.

"The airplane program has been the king for NASA in terms of dis-

coveries," Wennberg says. "Atmospheric science and certainly atmospheric chemistry, is still very much an observational field. The discoveries we've made have not been by modeling, but by consistent surprise when we've taken up instruments and collected measurements."

In his field of atmospheric chemistry, Wennberg says the three foundations are laboratory work, synthesis and modeling and observational data—the latter being still the most important.

"You might have hoped we'd be at the place where we could go to the field as a confirmation of what we did back in the lab or with computer programs, but that's not true. We go to the field and see things we don't understand."

Wennberg sometimes worries about the public perception of the value of the Airborne Science Program because the launching of a conventional jet aircraft is by no means as glamorous or romantic as the blasting off of a rocket from Cape Canaveral.

By contrast, his own data-collection would appear to most as bread-and-butter work involving a few tried-and-true jet airplanes. "If you hear that the program uses 'old technology,' this refers to the planes themselves and not the instruments, which are state-of-the-art," he says. "The platforms may be old, but it's really a vacuum argument to say that the program is in any way old."

"I would argue that the NASA program is a very cost-effective way to go just about anywhere on Earth and get data." Chris Miller, who is a mission manager for the Airborne Science Program at the Dryden Flight Research Center, can attest to the range and abilities of the DC-8 by merely pointing to his control station behind the pilot's cabin.

On his wall are mounted literally dozens of travel stick-ons from places around the world where the DC-8 passengers have done research. Included are mementos from Hong Kong, Singapore, New Zealand, Australia, Japan, Thailand and Greenland, to name a few.

"In addition to atmospheric chemistry, we also collect data for Earth imaging, oceanography, agriculture, disaster preparedness and archaeology," says Miller. "There can be anywhere from two or three to 15 experiments on a plane and each experiment can be one rack of equipment to half a dozen."

Wennberg and colleagues Fred Eisele of the National Center for

Precautions at Palomar Minimize Fire Threat; Smoke Prevents Observations

By SCOTT KARDEL

PALOMAR MOUNTAIN, Calif. — The tragic fires that continue to affect San Diego County remind us all just how fragile life and property can be. Currently fires are slowly approaching the area of Palomar Mountain, home to the California Institute of Technology's historic Palomar Observatory.

Smoke and ash from the fires have put a temporary end to the observatory's nightly observations, but the Observatory itself is not threatened. In fact, the dome of the 200-inch telescope has been selected as an evacuation point for the Palomar Mountain Community.

"The builders of Palomar realized the potential fire danger and designed the 200-inch Hale Telescope to survive a fire. It is constructed with two layers of concrete and steel. Also, in recent months our maintenance staff along with foresters have removed dead and dying trees from the observatory grounds. We are prepared for the worst," says Palomar Observatory's superintendent, Bob Thicksten.

It doesn't hurt that the observatory has its own million-gallon water tank, an array of fire hydrants and staff members who double as volunteer firefighters. Thicksten has worked tirelessly to maintain a working relationship with the local fire department, the United States Forest Service and the California Department of Forestry, which has its own fire station less than half a mile from the observatory's main gate.

Atmospheric Research and Rick Flagan, who is McCollum Professor of Chemical Engineering, have developed special instrumentation to ride on the ER-2. One of their new instruments is a selected-ion-chemical ionization mass spectrometer, which is used to study the composition of the atmospheric aerosols and the mechanisms that lead to its production.

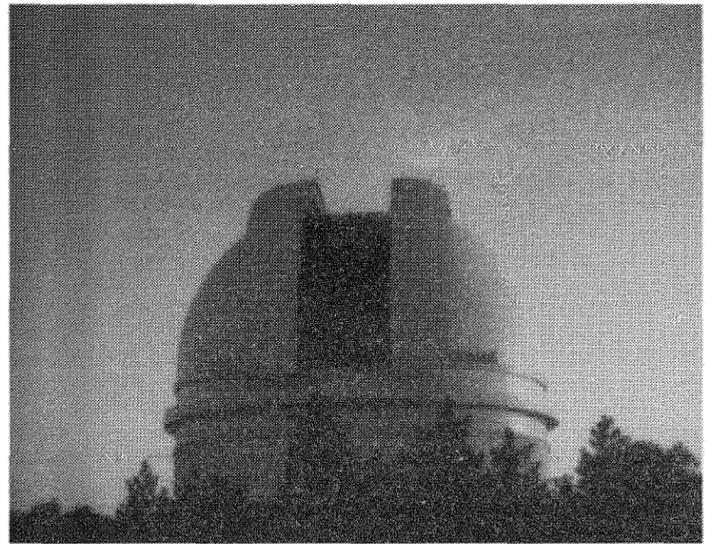
Caltech's Nohl Professor and professor of chemical engineering, John Seinfeld, conducts an aircraft program that is a bit more down-to-earth, at least in the literal sense. Seinfeld is considered perhaps the world's leading authority on atmospheric particles or so-called aerosols—that is, all the stuff in the air like sulfur compounds and various other pollutants not classifiable as a gas.

Seinfeld and his associates study primarily atmospheric particles, their size, their composition, their optical properties, their effect on solar radiation, their effect on cloud formation and ultimately their effect on Earth's climate.

"Professor Rick Flagan and I have been involved for a number of years in an aircraft program largely funded by the Office of Naval Research and established jointly with the Naval Postgraduate School in Monterey. The joint program was given the acronym CIRPAS," says Seinfeld, explaining that CIRPAS, the Center for Interdisciplinary Remotely Piloted Aircraft Studies, acknowledges the Navy's interest in making certain types of environmental research amenable for drone aircraft like the Predator.

"The Twin Otter is our principal aircraft and it's very rugged and dependable," he adds. "It's the size of a small commuter aircraft and it's mind-boggling how much instrumentation we can pack in this relatively small aircraft."

Caltech scientists used the plane in July to study the effects of particles on the marine strata off the California coast and the plane has also been to the Canary Islands, Japan, Key West, Florida and other places. In fact, the Twin Otter can



Courtesy of www.astro.caltech.edu

Recent forest fires in San Diego County have shut down the observatory and now threaten to surround it.

Palomar Observatory was built after results from the Mount Wilson 100 inch telescope demonstrated the need for a larger telescope. Construction began in 1934 on the building, which was completed in 1941.

The 200 inch glass disk was cast by Corning Glass Works in 1934. However, the disk didn't arrive at Caltech for grinding and polishing until after an eight month cooling period. Scientific research at the observatory began in 1948, after a brief testing period on the finished mirror.

Observations are done using the telescope on nearly every clear

night. The observatory is used to study a wide range of objects from comets in the solar system to quasars billions of light years distant.

Data collected by the researchers at the telescope helps answer a variety of questions including questions about the formation of the galaxy, the age of the universe, the future of the universe, and in general the data helps to enhance or understand of the universe.

The Observatory also faces a light pollution problem due to the urbanization of California. Continued increases in sky glow could cause critical amounts of interference for the telescope.

essentially be taken anywhere in the world.

One hot area of research these days, pardon the term, is the interaction of particulate pollution with radiation from the sun. This is important for climate research, because, if one looks down from a high-flying jet on a smoggy day, it becomes clear that a lot of sunlight is bouncing back and never reaching the ground. Changing atmospheric conditions therefore affect Earth's heat balance.

"If you change properties of clouds, then you change the climatic conditions on Earth," Seinfeld says. "Clouds are a major component in the planet's energy balance."

Unlike the ER-2, in which instrumentation must be contained in a small space, the Twin Otter can accommodate onboard mass spectrometers and such for onboard direct logging and analysis of data. The data are streamed to the ground in real time, which means that the scientists can sit in the hangar and watch the data come in.

Seinfeld himself is one of those on the ground, leaving the two scientist seats in the plane to those whose instruments may require in-flight attention." We typically fly below 10,000 feet because the plane is not pressurized. Most of the phenomena we want to study occur below this altitude," he says.

John Eiler, associate professor of geochemistry, is another user of the NASA Airborne Research Program, particularly the air samples returned by the ER-2. Eiler is especially interested these days in the global hydrogen budget and how a hydrogen-fueled transportation infrastructure could someday impact the environment.

Eiler and Caltech professor of planetary science Yuk Yung, along with lead author Tracey Tromp and several others, issued a paper on the hydrogen economy in June that quickly became one of the most controversial Caltech research projects in recent memory.

Using mathematical modeling, the group showed that the inevitable

leakage of hydrogen in a hydrogen-fueled economy could impact the ozone layer. More recently Eiler and another group of collaborators, using samples returned by the ER-2 and subject to mass spectroscopy, have reported further details on how hydrogen could impact the environment.

Specifically, they capitalized on the ER-2's high-altitude capabilities to collect air samples in the only region of Earth where it's simple and straightforward to infer the precise cascade of reactions involving hydrogen and methane.

Though it seems contradictory, the Eiler team's conclusion from stratospheric research was that the hydrogen-eating microbes in soils can take care of at least some of the hydrogen leaked by human activity. "This study was made possible by data collection," Eiler says. "So it's still the case in atmospheric chemistry that there's no substitute for going up and getting samples."

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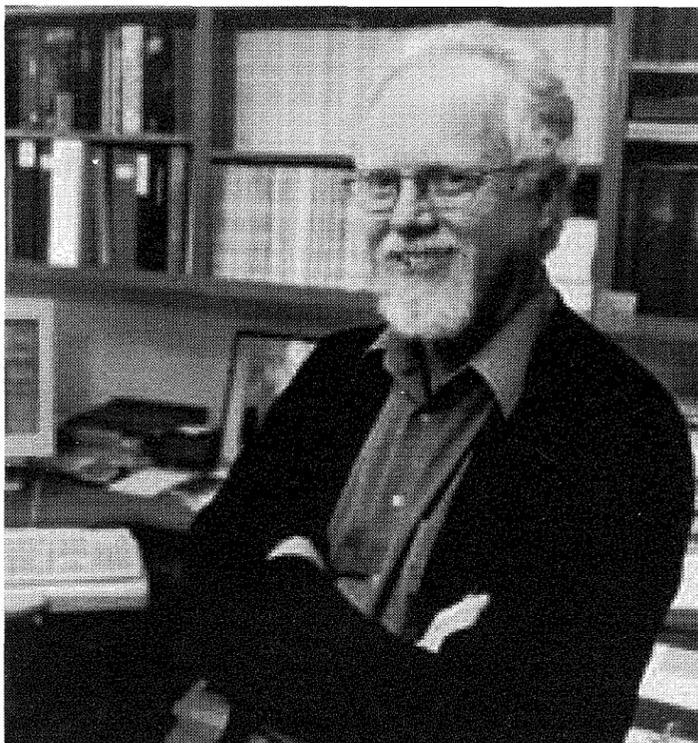
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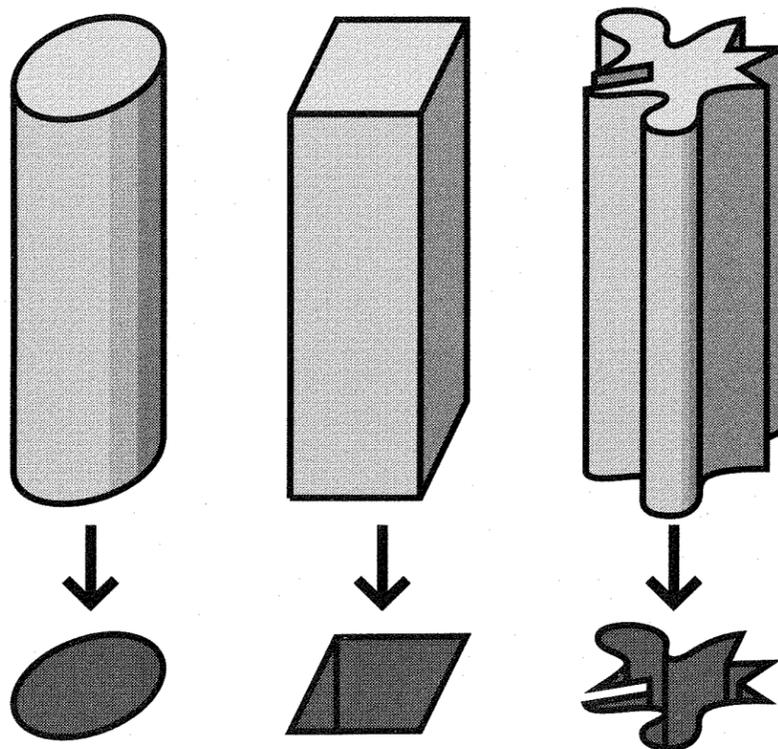
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Courtesy of www.che.caltech.edu

McCollum Professor Richard C. Flagan helped develop efficient and durable instruments to fly on a refitted U-2 spy plane.

We're good at fitting people to jobs.



And jobs to people.

It wouldn't be clear to every firm that a man with an M.F.A. in poetry was the right choice to head an automated block trading unit. Or that a designer of solar-powered race cars was the right woman to help launch a new venture in computational chemistry. But after we talked to them, it was clear to us.

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The D. E. Shaw group will host an information session on Monday, November 10 at 3:30 PM in the Chris Brennen Conference Room at the Student Services Center. On-campus interviews will take place November 11. To apply for an interview, log on to <http://www.career.caltech.edu/students/recruit.htm>. If this isn't possible, please send a resume and cover letter stating your GPA and standardized test scores, broken down by section where applicable, to oncampus@deshaw.com. Open sign-ups begin October 21 and end November 9.

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ASCIT BoD Encourages Student Representative Accountability With Committee Oversight Resolution

By TOM FLETCHER

Committee Reporting and Transparency

Last week, the ASCIT BoD passed a final version of our committee oversight resolution. The process began last spring with the intention of creating a mechanism to keep students informed of what was happening in the faculty committees that govern much of school policy.

In the past, these committees were woefully underattended by student representatives and acted below the radar, until something big came out of one like a change in our health insurance.

The resolution passed last week was designed to comply with the faculty bylaws so that we do not anger our fellow committee members. Otherwise, the resolution was identical to the previously passed version last June.

In the interest of keeping everyone informed, I've included it below. The capitalized portion is the added section to comply with the faculty bylaws, which basically require that any information that leaves a committee be cleared by the chair.

At present, some committee members have started sending in summaries (thank you very much!) and I hope the rest will start. They should be sent to the ASCIT Secretary and will be compiled and posted on the donut website. I encourage the curious undergraduate to check the site as soon as it opens to get up to speed on what is happening on campus! Now, without further ado, the resolution:

Noting that there is no current definition of the responsibility of undergraduate committee members and alternates and realizing that this is the cause of some confusion among undergraduates and affirming the need for transparency, accountability and accessibility of Student/Faculty committees and their members, 1. ASCIT recognizes the need for committee representatives to be accessible and accountable to the community. Committee members shall exercise due diligence sound out student opinion on the issues discussed by the committee they serve on to best represent the student body.

2. Representatives and alternates to Institute committees are required to e-mail to the BoD short written summaries of all meetings they attend in their capacity as a representative prior to the next meeting of the committee or within two weeks (whichever is shorter).

These summaries are to be disseminated to the student body online by the ASCIT Secretary. It is strongly encouraged that the *California Tech* post a list of updates and a link to them to keep the student body informed. If there are multiple representatives on a committee, only one summary needs to be sent.

Guidelines for a summary: List of students and faculty in attendance, date and time. List of agenda topics covered. Any additional explanation of topics covered deemed necessary by the representatives (especially on sensitive issues, like changes in student housing).

It is strongly encouraged that, in the event of an issue that affects the entire student body, to directly inform the BoD in person, as well as directly informing the student body in the *California Tech*.

In the case that the proceedings of a committee are confidential (e.g. UASH), a list of student representatives and faculty present is sufficient. If a meeting has official minutes being taken, it is encouraged that those minutes be submitted in lieu of a summary.

IN ACCORDANCE WITH THE FACULTY BYLAWS, ANY SUMMARY ISSUED BY A STUDENT REPRESENTATIVE MUST BE APPROVED FIRST BY THE CHAIR OF THE COMMITTEE. IT IS RECOMMENDED THAT THE SUMMARY BE APPROVED AT THE END OF THE MEETING OR LATER SENT TO THE FACULTY CHAIR FOR APPROVAL, THEN SENT TO THE ASCIT SECRETARY FOR POSTING.

3a. The resolution serves an interim purpose of keeping the students informed of committee actions. During this interim, the BoD should continue to work to convince the faculty of the need to take publicly-distributed minutes at all committee meetings.

b. If attendance by student representatives does not show improvement by the end of first term 2003-04, this resolution should be reconsidered for strengthening.

Whom I Met With This Week

My meeting with Margo Marshak was relatively informal this week, as we have mostly only good news to discuss. I have been sure to air concerns about the Moore-Hufstедler Fund's allocations and will continue to do so. Due to midterms, it was otherwise a slow week.

I intend to meet with Dan Langdale, the interim head of admissions shortly. One topic we are discussing is informally setting up a system of student volunteers that could host interested high school students overnight for free, for those who cannot come to Pre-Frosh Weekend or just want to see the school earlier.

If hosting a student on a semi-regular, informal basis sounds fun to you, please email me (pres@donut.ugcs.caltech.edu) so we can compile a list of volunteers. Also, if you have other concerns you would like raised with him or Margo Marshak, please let me know.

Insight from Benjamin Mays

Benjamin Mays was many things: preacher, educator, leader and mentor. He was a close friend and colleague of Martin Luther King Jr.'s and delivered his eulogy. Reading his biography, I stumbled on another little insight that he clearly shared with Albert Memmi (for students of Professor Rosenstone's) that is worth considering in our current situation.

"We seldom realize what discrimination does to the person that practices it. It scars not only the soul of the segregated, but the soul of the segregator as well; we cannot grow to the mental and moral stature of free men if we view life with prejudiced eyes; it is economically and psychologically wasteful." - from "The Church Amidst Ethnic and Racial Tensions," Benjamin E. Mays, 1954.

While reading this at the Coffeehouse, I was challenged to think: how does this apply to Caltech? First off, Mays uses very strong words, that given his era, were jus-

tified. Caltech doesn't seem to have segregated and segregators, we have two populations that seem to mutually agree to separate.

Our self-selected segregation is de facto in nature; it is not illegal or planned, it just seems to happen. In a number of discussions I have had with other students on this issue, if it really is self-inflicted by choice, what's wrong with it?

I concede that this is a hard assertion to counter. De facto segregation is tricky like that: without any overt racist crimes, is there anything to act on? For one, as cultures separate, cultural norms deviate and stereotypes propagate.

A unified Caltech culture, that once revolved around an honor code, pranking, academics and house life, is not possible with a split student body. The bond shared by all Caltech alumni that forms from this common experience is a very real and powerful thing (from having been to several Alumni Association meetings) and without the common culture, it cannot exist.

Stereotypes also spread and they do nothing but harm both parties. Calling studious off-campus Asians "grade whores" is nasty and hurtful to that party, but also harms the person who conceives it. Sitting in class, surrounded by people you are

convinced are working harder than you ever will, can be discouraging to the point of enforcing poor academic performance.

On the flip side, I do not know what stereotypes get bandied about within the Asian community, but I can imagine they focus on "immature," "drunken," or "lazy." This stereotype of the other can reinforce one's own inclination to not mingle and not develop the skills needed to get grant money or receive tenure.

I can't say it enough: despite excellent performance in undergraduate and graduate schools in the United States, Asians do not seem to be represented as well in the halls of academia and this may be one of the aspects from which the pernicious cycle starts.

Benjamin Mays and Albert Memmi's ideas are far more complex than what this newspaper column glimpse allows, but I encourage you to seek them out. Just because both sides agree to separate does not mean that everything is ok and that things will be fine. Segregation in all forms is a monstrous evil and one that must be fought at every instance and appearance.

Peace out Caltech,
Tom Fletcher

PS: In the event that you have gouged out one of your eyes (as you clearly need one to read this), please seek medical attention. I apologize for bringing you to such heights of self-mutilation and urgently hope that the imminent infection is treated swiftly and painlessly.

Letters: Wasem Waste of Time

Dear Editors,
I am writing this letter to point out a truth that is inherently obvious to many people around campus: Joe Wasem is an idiot. Furthermore, he is an arrogant, self-absorbed human being that, contrary to his own inflated opinion, has little to no real ability for commentary.

His letter to the editor last week neither inspired nor informed, and provided little more than something to ridicule that week in *the Tech*. Every time I read his letter I wish for a dull number two pencil to jab into my eye while screaming "You can be a jackass, just shut up! Shut up! That would be less painful than reading a poorly thought out letter about how Wasem does not have the balls to tell Tom personally he thinks he is an idiot, and instead wishes to waste space in *the Tech* telling everyone. And yet, there is hope. In less than two years, Joe Wasem will no longer be a Caltech student, and with any luck we won't have to listen to him anymore.

Nick Rupprecht '05, Jesse Escobedo '05, Jessica Gray '05, David Stafford '04

Dear Editors,
I would just like the rest of the houses to know that Ruddock isn't full of reactionaries whose best response to differences with other students is to write a column that can be summarized as: "hurrr, your mom!"
Jon Winn '06

Area Asian Man Puzzled Over Why White People Just Can't Get Along

By LIBIN ZHANG

I noticed last issue that a certain Joe Wasem wrote a little letter to *the Tech* concerning our ASCIT President Tom Fletcher. Joe was especially critical of Fletcher's chats around the proverbial fireplace. While I am not particularly surprised at a conservative Republican making ad hominem attacks, can't we all get along?

I learned in kindergarten that 'idiot' is a bad word. Some people might find it hypocritical that I am asking people to not make fun of other people, especially since I may have been responsible for some pictures in *the Tech* that obliquely compared Tom Fletcher to Chairman Mao.

The difference is that I offer very unhelpful criticism on ideological matters, or I make some far fetched historical comparison. There is a certain amount of ridiculousness and absurdity; I'm not really serious about change. Labeling someone an 'idiot,' however, leaves the issue open to interpretation. In general, calling people names is not very nice.

Caltech is a small place. Folks generally know everyone in their

House and of their race. People also tend to encounter everyone else after a while, especially those that they may be wary of. In places like Congress, the Supreme Court, the United Nations and the Indianapolis Star Trek Convention, people remain cordial and friendly despite long, drawn out differences in opinion.

Sadly, the level of professionalism at Caltech is slightly lower and some people tend to mix distaste for policy with distaste for personality. No two individuals can possibly share the exact same opinions on everything, unless it is a guy trying to get into the girl's pants.

Disagreement on particular issues does not have to degenerate into mutual animosity. I try to make a distinction between attacking the abstract idea and attacking individuals espousing that idea.

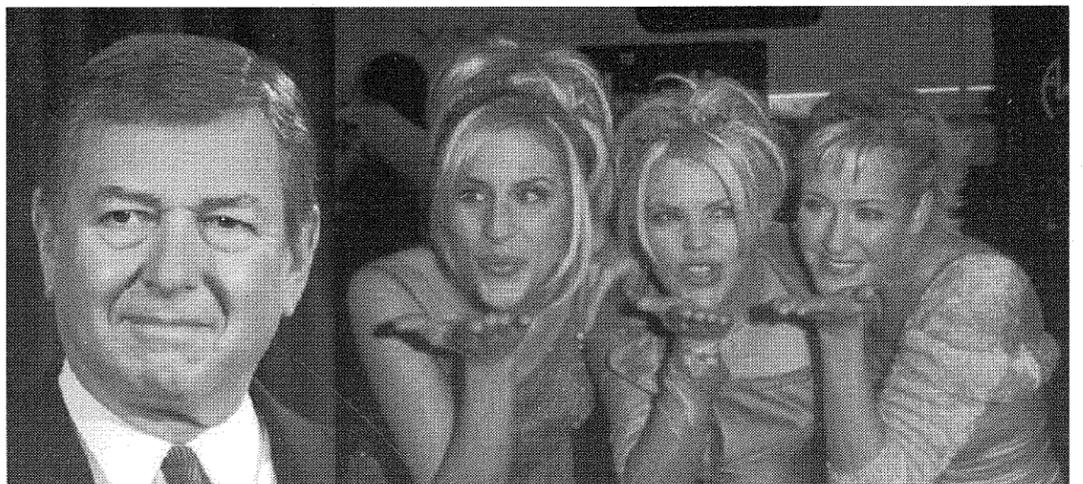
I personally find the 'whom I met with this week' section a bit jejune; Let me guess, Margo Marshak again? However, that does not mean that I share the opinion that Tom Fletcher is 'a dumbass.' One can reject the Trinity of Christ while admiring the Catholic Church.

My theory is that the anti-Tom Fletcher sentiment is a projection

of anti-'big government' libertarian ideals. Americans have traditionally been suspicious of bureaucrats and government interference in their daily lives. It seems like all ASCIT does is chat and manage committees, while not doing anything particularly useful and exciting without Tom Mannion's help.

To some students, the weekly 'fireside chats' seem like a waste of time. Maybe they prefer insightful and sensationalist commentary instead. Personally mocking the ASCIT President may generate some sort of schadenfreude amusement, but in the long run it may prove to be counter-productive. What alternative do the critics propose?

Let us not complain too much, since the ASCIT President was democratically elected and represents the will of the people. There were several opposing candidates. Some may claim that democracy is a stupid system; but as I recall, Joe Wasem was elected Ruddock Treasurer by a majority, over some other candidates. Denouncing democratically elected leaders would be a demonstration of hypocrisy worthy of Rush Limbaugh.



Thankfully, we live in an American society that is very tolerant of criticism. Pictured on left is US Attorney General John Ashcroft and to the right is the Dixie Chicks.

courtesy of L. Zhang

The Price of Fire: Greek Mythology and Blue Skies

By JEAN-PAUL REVEL

We can blame the disastrous fires of last week on the Titan Prometheus who gave fire to humans against the wishes of the administration, Zeus in command. Prometheus had a soft spot for us, we were his creatures. According to Greek Mythology it is he who fashioned the human race out of clay.

But, whoever you are, titan or clay doll, stealing someone else's stuff, can never be seen as acceptable behavior, even if there is a decent impulse behind it. In Caltech terms, it is called taking advantage of your fellow...well, Zeus and Prometheus were not exactly fellows, but you get my drift.

Divulging the secrets of fire apparently was the last straw for Zeus, who had been tricked by that scoundrel Prometheus before. So this time he had Prometheus chained to a rock high in the Caucasus at the very edge of the world and a long winged eagle, the worst kind, was commissioned to tear at his liver all day. The wound healed over and the liver grew back each night so the torture could start anew each dawn (it is true, liver does regenerate, although not quite so fast.)

Eventually, after many a year of suffering Hercules came on the scene, killed the dreaded eagle and rescued the people-loving titan from his rock. As I understand things (or maybe I don't have that straight) Zeus and Prometheus got along well with each other "forever after".

So you see, just as I told you, the troubles we have been having in Southern California all week, can be blamed on the antics of unruly Greek gods. If men had not been given fire, then at least some of the present calamity would have been avoided, since many of the fires seem to have been set by people, arsonists.

The toll this time is 20 souls, 2400 homes and 750,000 acres burned over! While it is disheartening to find that there are so many evil doers, it is encouraging to see the composure and courage of the victims, otherwise seemingly ordinary people.

Here they stand, being interviewed by ghoulish TV crews. Behind them one sees the smoldering remnants of their homes, piles of rubble except for the brick chimney rising to the sky like a scolding finger and perhaps the hiss and flamethrower-like jet of a severed gas connection.

Person after person, they talk dispassionately of their loss, of their gratitude to those who helped, of their relief that it was not worse. They speak sadly, resignedly but with a poise that seems extraordinary.

I have often asked myself, seeing the resilience of people under great stress, whether I would have the same strength. I doubt for example

that I could be like my parents had to be during war time, doing what had to be done, in seeming calm, in spite of what must have been a sense of dread, of anxiety, a cold sweat fear that one was living one's last moments.

The wild flames consume people's dreams and send their treasures skywards on lasciviously twisting wisps of smoke. It looks so terrifyingly easy to lose it all at the whim of an ember or two. It looks terrifyingly easy to lose not just belongings, but also one's life.

A wrong turn in the smoke and dusk, in the unrecognizable landscape streaked with flames and smeared with soot, an instant of delay, a smidge of hubris, it can't happen, can't happen to me and yet it does happens, here, now. That's all it takes.

It is the same game as in everyday life to speak of the mundane, as in your life as a student to be personal. An instant of delay, waiting too long before starting that homework and so not getting finished on time, a smidge of hubris, all that advice is unneeded, I know what I am doing, a wrong turn, maybe turn to that page, look at that solution...all can lead us into all kinds of trouble, not as terrifyingly final as death, but trouble.

The figurative wild flames to be faced if cheating can send your dreams out of reach on twisty wisps of smoke. The fires, in spite of their raw ferocity, can paradoxically also bring on the most exquisite views.

Just the other day I left the building at dusk, which comes early now that we have "fallen back". A delicately crisp ivory crescent moon floated in the sky, high above the dark silhouettes of slightly bent tall palm trees.

The sky itself was of the most touching blue, the kind of color that so surprises in paintings of masters like Canaletto or Botticelli. Overlying the whole display were wispy cirrus clouds turned a bright coral pink by the smoke-filtered setting sun.

Yes we choke and we sneeze, eyes water and discomforts of all kinds accompany the falling ash from the distant fires, yet there is beauty to be seen. How far the smoke reaches becomes clear in the images taken by cameras aboard the Terra satellite (go to the JPL homepage).

How stunning they are, these dark plumes reaching far out to sea, wafted west by the Santa Ana winds. And the again, in the afternoon, the smoke nearly obliterates the sun. Still high, it barely shines through like a blood shot eye ogling the world reproachfully.

Someone told me that they were able to see the sunspots. I had tried to look for them but it was too bright, so I missed that excitement. To me the apocalyptic spectacle seems most appropriate for a sun that has just sent the third enormous flare of the month. If it were not for all the smoke perhaps we could see the borealis tonight, even though we live so far south.

And what of Prometheus, having escaped the edge of the Greek world, so long ago? He was discovered by Voyager 1, in 1981, perched on the rings of Saturn...Incredibly, if you look at the picture (JPL...Prometheus is all you have to enter), there he is: you can see his nose, left eyebrow and eye, the right one drowned in the glare, wearing a Phrygian Cap and staring out, maybe waiting for Cassini to arrive. He reminds us...don't play with fire.

A bientot

ASCIT Minutes: October 21st, 28th

October 21st, 2003, 12:04 PM, Olive Walk

Agenda
1. Call to Order
2. ASCIT welcomes Abe Fetterman as the new Social Director!

3. We are Scientists! is coming to play at midnight on Saturday, Oct. 25th in the RF Courtyard.

4. Some undergrads have expressed concern about accepting \$1000 from the Moore-Hufstедler Fund if it means making the DVD library available to grad students. The ASCIT DVD library needs continued funding in order to replace old DVD cases and purchase new titles; Over the years, undergrads have put a lot of money into the DVD library and some feel that it would be unfair to allow grad students to borrow DVD's for a one-time investment of \$1000. ASCIT and the GSC will have to reach some sort of agreement before ASCIT accepts the \$1000.

5. The IHC gave tours to Tim Downes and Erica O'Neal from Student Affairs. The IHC will put out a survey about rotation.

6. Representatives from the BoC and GRB attended a conference at the San Diego Center for Academic Integrity. BoC statistics will be published soon and Galen says that he will attend BoC talks at the seven houses.

7. Joanna says that a man who wished to donate gun-training sessions to ASCIT contacted her. She was strongly advised by Matt Brewer to only accept donations if they agree with ASCIT statement of purpose. Vote to accept the donation: 0-5-0, rejected.

8. The new Council for Undergraduate Education (CUE) representatives are Haluna Gunterman and Elizabeth Felngale. The alternate is Kathryn Hsu.

9. This year the amount allotted for athletic jackets was reduced from \$100 0 to \$200. The BoD redistributed that money so that it would benefit more than just a handful of students.

10. The *little t* is at the printers.

11. Jessica Gray requested \$100 from Multi-House funding for Pumpkin Drop; Vote: 5-0-0, approved.

12. Alex Shim expressed his concern that Caltech has not invested in TA training and a Teaching Center as planned. He wishes students would take a more proactive approach to life at Caltech and express a greater interest in their education. Meeting adjourned at 12:56 PM.

October 28th, 2003, 12:03 PM, Olive Walk

Agenda
1. Call to Order
2. Fleming requested \$100 from Multi-house for laser tag with Lloyd. Vote: 6-0-0, approved.

3. Dabney requested an additional \$100 from multihouse for pumpkin drop. Dabney has already requested their \$100 for the term, so they cannot request another \$100.

4. Lloyd requested \$100 retroactively from multihouse for lasertag with Fleming. The BoD agreed that they would not vote on it, because the event already took place. Ryan Olf expressed his outrage that the BoD would not approve \$100 retroactively. Ryan cited the small size of the Caltech community as a reason to make decisions on a more personal basis and asked the BoD to make an exception for Lloyd. The BoD has already denied other houses multihouse funding for that

exact reason. Houses must request funding before an event has taken place.

5. The resolution from last term was reworded so that it conforms to the Faculty Bylaws. It now states that committee chairs have to sign on anything released by the committee. Vote: 4-0-2, approved.

6. The details of the DVD agreement with the GSC are still being worked out. Also, the registrar's new privacy policy will make the graduate student UID information more difficult to obtain. In the future, ASCIT will also be able to charge student IDs once a term if students fail to return DVD.

7. The *little t* failed to show up at ASCIT meeting. This year's *little t* contains many gross errors, including incorrect committee information as well as references to the Director of Residence Life, which no longer exists. The directions to the card office are also incorrect. ASCIT would like to talk to the *little t* editors about printing supplemental inserts with the correct information.

8. Galen apologizes for the tardiness of the donuts last Friday. It has also been brought to his attention that students have complained that there were inaccuracies in last week's *Tech* article on the BoC.

9. Several students have expressed their concern that the Moore-Hufstедler Fund will not publish the details of submitted proposals. This information would provide students with examples of what successful proposals look like as well expose them to interesting ideas from other proposals.

10. We Are Scientists! was a hit - thank Abe for doing a great job!

Meeting adjourned at 1:03 PM.

Respectfully Submitted,
Anna Sczaniecka
ASCIT Secretary



courtesy of J. Revel
Prometheus, bearer of fire, was discovered in 1981 by Voyager, banished to the rings of Saturn.



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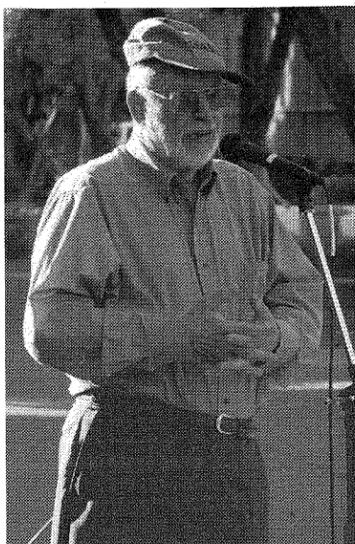
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Thomas Maier will discuss his new book, "The Kennedys: America's Emerald Kings -- A Five-Generation History of the Ultimate Irish-Catholic Family," on Tuesday, November 4, at 8 p.m. in Caltech's Beckman Institute Auditorium.

Drawing on groundbreaking research both here and abroad, including newly available documents from the Joseph P. Kennedy archive at the John F. Kennedy Presidential Library, Maier's clear-eyed portrait of the Kennedys, spanning five generations, examines the family through the prism of their Irish-Catholic experience. He shows how their ethnicity and religion shaped the choices they made -- beginning with Patrick Kennedy's arrival in the Brahmin world of Boston in 1848 -- and impacted on their political and personal behaviors.

Maier is a staff reporter at New York Newsday. He is the author of the critically acclaimed "Dr. Spock: An American Life," which was a New York Times Notable Book of the Year and chosen by The Boston Globe as one of the top ten nonfiction titles of the year.

A book signing will immediately follow the reading. Guests may bring their own books or purchase books on site. This event, part of Caltech's Voices of Vision series, is open to the public free of charge. No tickets or reservations are required.

Caltech Ballroom Dance club invites you to join us to learn the popular, flashy, sexy American Tango! The series of four classes taught by professional instructor, Andre Fortin, begins on Nov 6 and runs on Thursdays (except Thanksgiving) until Dec 4. Time: 7:30 - 9:00 pm, Place: Winnett Lounge, Cost: Students- \$20 for series or \$6 / class and Nonstudents- \$28 for series or \$8 / class Refreshments will be served. No experience or partner necessary!

Try Caltech Ballroom Dance team classes in International Style Quickstep! These classes will focus on form and style, in addition to learning exciting new moves. While we welcome beginners in this competitive-style class, practice outside the class is strongly recommended. This series of four classes taught by professional instructor Andre Fortin begins on Nov 6 and runs on Thursdays (except Thanksgiving) until Dec 4. Time: 9:30 - 10:30 pm, Place: Winnett Lounge, Cost: \$3-\$6 / class depending on attendance. No experience or partner necessary!

On March 12 and 13, the Dance Troupe will present the first ever Caltech Dance Show presenting the dance talents of the Caltech community. We are eager for a wide variety of dance styles; so, auditions will be open to all members of the community. The first part of the process will consist of a written proposal. Choreographers will submit information describing their intended piece's music, theme, style (country of origin if applicable), and staging (likely number of dancers, lighting concepts, etc). The point of the proposals is to get people to start working on their dance pieces. Proposals will be due on November 17 and are

available at <http://troupe.caltech.edu>. There will be an audition in early Winter quarter where the dancers for each piece will perform; costumes will not be required at this stage. For more information, contact Robin Deis (deis@its.caltech.edu). More details will be provided as the year progresses. We look forward to giving Caltech a chance to showcase its dancing talent.

Dance Troupe Fall Classes. There will be eight classes in each professionally-taught dance series. All classes meet in the Braun Gym multipurpose room. No special clothing or shoes are required for the beginners' classes. To attend classes, simply show up with a Caltech ID or gym membership card. RSVPs are needed for the bellydancing class (Kathy.Kelly@caltech.edu). To be added to our mailing list, please e-mail troupe@caltech.edu. For more information, see our website: troupe.caltech.edu

Hip-Hop for Advanced Beginners Thursdays, 9:30-10:30 PM, starts 10/9
Professional Instructor: Collette Sibal
Trial class fee: \$5
Caltech students full term fee: \$30 (\$3.75 per class!)

Other Caltech community members full term fee: \$40 (\$5 per class!)
Beginning Bellydancing Saturdays, 12:45-1:45 PM, starts 10/4
Professional Instructor: Leela
Trial class fee: \$5
Caltech students full term fee: \$30 (\$3.75 per class!)

Other Caltech community members full term fee: \$60 (\$7.5 per class!)
CLASS SIZE IS LIMITED so RSVP to Kathy.Kelly@caltech.edu
Beginning Ballet Wednesdays, 10-11 PM, starts 10/8
Instructor: Julie Liu
FREE!

Advanced Ballet Mondays, 10-11:30 PM, starts 10/6
Instructor: Catharine Larsen
FREE!

Caltech is offering **Guitar Classes** for the fall term on Tuesdays starting October 7. Beginning 4:30-5:30 p.m., Intermediate 3:00-4:00 p.m., Advanced 5:30-6:30 p.m. in the Student Activities Center (SAC) Room 1. Classes are free to Caltech students, and staff is space permits. The instructor is Darryl Denning. For more information, contact him at ddenning@caltech.edu or x. 2923.

Scholarships: The Financial Aid Office has applications and/or information on the following as well as additional undergraduate scholarships. All qualified students are encouraged to apply. Our office is located in the Center for Student Services M/C 110-87.

The American Heart Association 2004 Undergraduate Student Research Program enables promising students to explore careers in heart or stroke research. Students are assigned to cardiovascular research laboratories in California, Nevada or Utah for 10 weeks during the summer to work under the supervision of experienced scientists. Students must be enrolled full time, attend an institution in California, Nevada, or Utah or be a resident of one of those states and be a junior or senior in fall of 2004. The student must have completed a combined total of at least four semesters or six quarters of biological science, physics, or

chemistry, and at least one quarter of calculus, statistics, computational methods, or computer science. Participation by women and minority candidates is encouraged. Award: \$4000 stipend for each student Term: 10 weeks to be completed between June 1 and August 21, 2004 Applications are available at www.americanheart.org. All materials must be received by February 2, 2004. For more information, email: research@heart.org

The San Fernando Valley Chapter of Americans United for Separation of Church and State announces their fourth Essay Contest for students enrolled in Community Colleges, Colleges, and Universities in the counties of Santa Barbara, Ventura, Los Angeles, Orange, San Bernardino, and Riverside. Essays should be no more than 2500 words in length, and tell, in your own words, why it is important to you to maintain a separation of church and state. 1st Prize \$1,000 2nd Prize \$500 3rd Prize \$250. Essays must be mailed and postmarked no later than December 31, 2003. To: Church-State Essay Contest P O Box 8061 Northridge, CA 91327-8061 For more information please visit: www.ausfv.org/essaywebpage2.htm.

The Society of Exploration Geophysicists (SEG) Foundation Scholarships are available to high school seniors planning to enter college in the next term, with above average grades, undergraduate students with above average grades, or graduate students whose studies are directed toward a career in exploration geophysics in operations, teaching or research. Applications and supporting documents must be received by March 1, 2004. Applications are available in the Financial Aid Office. For more information, see the SEG website: www.seg.org/foundation/

The American Society of Naval Engineers offers a scholarship program to encourage students to enter the field of naval engineering and to provide support to naval engineers seeking advanced education in the field. Scholarships of \$2,500 for undergraduate students, and \$3,500 for graduate students will be available for the 2004-2005 school year. Applications are available on the website: www.navalengineers.org, under "Scholarships." The deadline for receipt of scholarship applications is February 15, 2004.

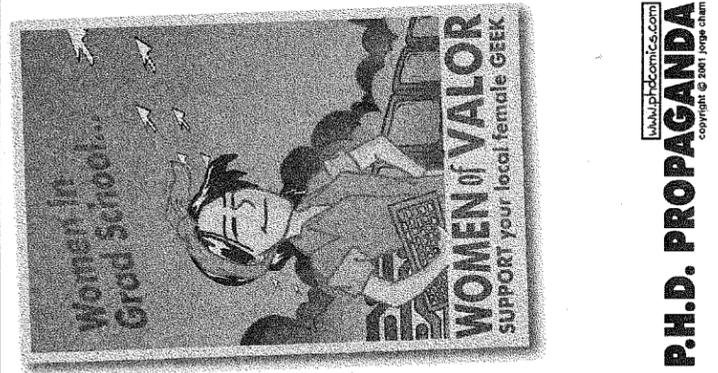
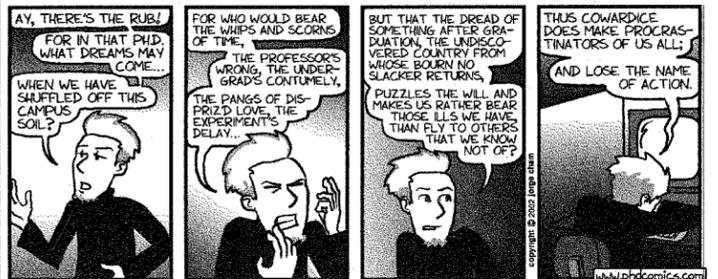
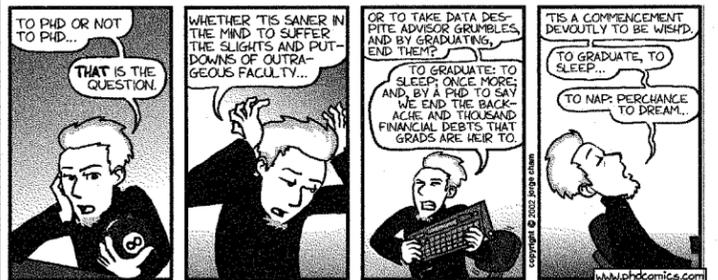
The Measurement Science Conference (MSC) has established a scholarship to fund students in an Engineering, Science or Quality Assurance degree program. The scholarship program places emphasis on experience or accomplishments related to the application or advancement of measurement science technology. To be considered for one of five, \$1,000 scholarships, individuals must: have completed at least 24 units of upper division courses in an Engineering or Science Degree Program or five courses in a Masters Program in Quality Assurance; have an overall grade point average of 3.2 or greater; be a U.S. citizen; be able to attend the Measurement Science Conference on January 16, 2004 in Anaheim. Submit an application before November 28, 2003. Applications are available in the Financial Aid Office.



FUN with STATISTICS! IF THE SAMPLE POPULATION IS LARGE ENOUGH, THEN IT'S TRUE! (SOURCE: U.S. CENSUS BUREAU)

13,154,000 Number of undergrads currently enrolled	TOP 2 HIGHEST NUMBER OF PHD'S CONFERRED IN 1997	28.7 % of general population that has never married, is separated or divorced
1,747,000 Number of grad students currently enrolled	# PHD % FEMALE	24.7 % of population with a post-Bachelor's degree that has never married, is separated or divorced
44,000 Number of PhD's conferred this year (projected)	1. EDUCATION 6751 62.8	(Finally, a reason to hang in there!)
3.28 % of Bachelor degrees earned by International Students (1997)	2. ENGINEERING 6210 12.3	
24.9 % of PhD's earned by International Students (1997)	MEAN EARNINGS (1999)	
	MALE FEMALE	
	MASTER'S \$64,533 \$40,429	
	PhD \$62,819 \$54,552	

(all data refer to U.S. population) www.phdcomics.com



The Fannie and John Hertz Foundation takes great pleasure in announcing its Fall 2003 Fellowship Awards.

Ms. Kimberly Beatty
Department of Chemistry

is one of 15 Hertz Foundation Fellows chosen from a field of 584 applicants to receive a five year, \$200,000 Graduate Fellowship Award in the Applied Physical Sciences. The Hertz Foundation would like to extend its congratulations to California Institute of Technology for attracting this Fellow to their graduate program.

See for more details.

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WE'VE BEEN THERE.

Horvath, Levy Criticize Report; Loans Scare Off Poor Prospective Collegians

Continued from Page 1, Column 3

U.S. Department of Education will make information about college costs, including the College Affordability Index, publicly available through a user-friendly website.

2. "Eliminating Unfair Barriers to Students Transferring Credits": If a student is barred from transferring credits for political or territorial reasons, the student would have to spend more money and time for work that they have already done. As a result, these barriers must be eliminated.

3. "The College Affordability Demonstration Program": With the Affordability in Higher Education Act enacted, the College Affordability Demonstration Program will also be created to explore innovative solutions to cut down college costs and as a result lighten the load on students and parents.

4. "Accountability for College Costs": Along with consumer empowerment, the bill also adds new accountability for dramatic cost increases. College and universities will be held accountable for College Affordability index score that exceeds 2.0. Simply, that if the tuition rises by more than two times the Consumer Price Index (CPI) for an interval of two years, additional attention will be paid to the institution.

The colleges and universities with an Affordability Index higher than 2.0 will be required to provide the following information to the U.S. Department of Education: (1) An explanation of the factors contributing to the increase in the institution's costs and in tuition and fees charged to students; (2) A management plan stating the steps the institution is and will be taking to

reduce its college Affordability Index; and (3) An action plan, with a schedule, by which the institution will maintain or reduce increases in such costs and tuition and fees.

If the institution fails to improve the situation after two academic years, additional measures will be taken so that all the expenditures are accounted for. The information will be released to the public and the institution will be placed on the "cost affordability alert" status.

Should the institution still fail to comply after 1 academic year, the federal subsidies that do not apply to the students directly will be removed from the institution. However, institutions that are recognized as "low cost" will be exempted from the regulations.

Academic institution will not be affected by the bill until 2003, when the Affordability Index is calculated and the earliest an institution will be removed from federal subsidies would be in 2011 school year.

All of these sound like a really good solution, but what do the people working for the "higher educational institutions" think? "The bill just sounds like a really naive solution to a complicated situation," said Albert G. Horvath, Caltech's Vice President for Business and Finance, "with the federal government thinking they know more than they actually do."

Well, in the particular case of Caltech, we have had a 9% raise of tuition this last year and less than 4% during the last few years prior to that. What was the reason for it? Was it because, as "The College Cost Crisis" states, that Caltech probably "have not devoted similar analytic attention to their own internal financial structures?"

No. According to Horvath, the ex-

ceptional increase in tuition this year was due to the rise in health insurance that just gets more expensive over the year. Otherwise, Caltech has kept a tight control on their tuition decisions with attention to the needs of the students and their parents in mind.

"Therefore, it is quite incorrect to place the blame on the institutions themselves. And we fear that the severe consequence of this act will only hurt the students themselves."

According to Horvath, withdrawing federal aid based on the decision of the federal government is not a wise decision, because there are more factors involved in raising tuition than simply wasteful spending on the colleges' part.

"In state schools, for example, they raise their tuition by a large amount because their own state government cuts the funding," moreover, "purchasing newer lab equipments and getting high-quality faculty aren't exactly cheap. Even though Caltech is a very much research-oriented institution and tuition constitutes a relatively small part of our revenue, the income from tuition is still important."

"Unfortunately, with the bill in effect in 2008, it is like federal government is putting on a price control." "And we do understand that the students have their concerns, so we don't make any impetuous decisions."

"The bill also makes a mistake in trying to treat all the colleges alike when they are not alike on some levels" says Horvath, "for example, some private schools are more tuition driven and therefore, they place more emphasis on getting the tuition from the students." "It is just not a very fair decision to treat all the colleges in the same way by

enacting this bill."

A detailed analysis on the situation by Caltech's Financial Aid Director, David Levy, reveals similar concerns: since "The practice of discounting (providing financial aid to needy students) causes tuition rates to increase approximately 30% faster than they would otherwise," the bill would "disproportionately hurt lower income and minority students."

Low income students fear debt to a greater extent than middle and higher income students. This proposal would eliminate the primary sources of non-debt student aid for lower income students. Access to education would be impaired and retention and graduation rates among lower income students would plummet."

"It penalizes the colleges with lower tuition rates to a greater extent than colleges with higher tuition rates. By basing the index on percentage increases in tuition, colleges with higher tuition rates are able to increase tuition by a greater dollar amount that colleges with lower tuition rates."

It will increase the year-to-year volatility in tuition rates. When colleges are faced with an increase that exceeds the index, they may increase tuition at an even faster rate, in order to drop under the index during the next year."

Interestingly, people from other institutions hold similar opinions. According to an article by Stuart Silverstein, the Times Staff Writer, "Critics say McKeon's bill ignores the fact that an increasing number of students don't pay the posted, or 'sticker,' price of tuition. They note that many four-year college students receive tuition 'discounts,' in other words, grants or scholarships."

"They say that the students at four-year schools who pay full tuition, most of whom come from high-income families, are helping cover the cost of financial aid for low-income students."

"That money has got to come from somewhere," said Alexander W. Astin, director of the UCLA Higher Education Research Institute. If tuition increases were held to arbitrary levels, Astin said, administrators almost certainly would be forced "into drastic measures, which will only make it harder for a poor kid to go to college."

Moreover, opinion from the National Association of Independent Colleges and Universities indicates that: "There are several good provisions in this bill. We particularly support the proposals to increase information about college pricing and student aid, create a demonstration project to offer incentives to institutions that cut costs and improve quality and establish provisions that would ease transfer of credit among accredited post-secondary institutions."

"However, we remain strongly opposed to Mr. McKeon's effort to impose price controls on the tuition charged by colleges and universities. While the version contained in this legislation is an improvement on his earlier proposal, it still suffers from multiple flaws."

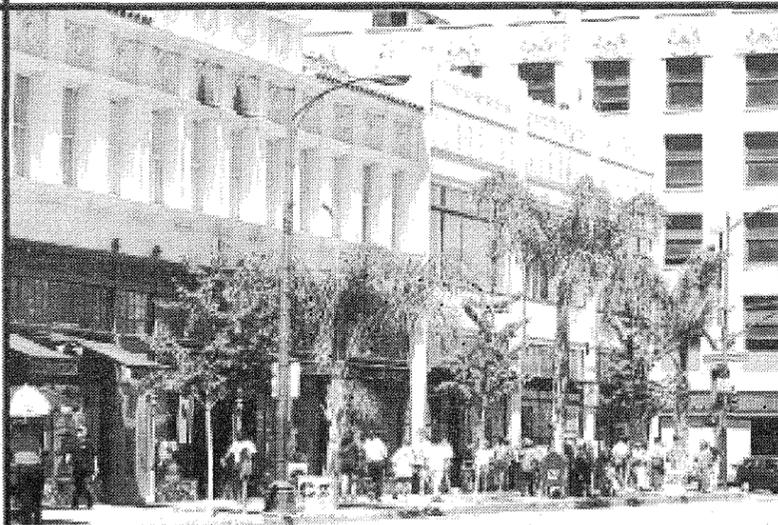
"Among its shortcomings: it is complex and highly regulatory; it penalizes low-income students; it creates undesirable incentives for schools; it applies to colleges that do not set their own tuitions; and it gives the ultimate control of the price of a higher education to a government agency in Washington."

Apparently, the controversial bill is not a be-all-end-all solution to all our problems. With those contradicting opinions in the back ground and the tuition costs still escalating as a nationwide phenomenon, there is still a long way to go towards affordable education.

McKeon is the Representative of the 25th district of California.

A full copy of the "College Cost Crisis" report is available online at the Education Committee's website.

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If you belong to an association, corporation or other group that holds meetings or conventions, why not bring them home to Pasadena?

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Just call Matt Hourihan at (626) 795-9311 or e-mail him at mhourihan@pasadenacal.com. If your group decides to meet in Pasadena, you could be eligible to receive one of several fabulous prizes!

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From PCS to Petaflops-The Future of Really Big Computers

By MARK WHEELER

PASADENA, Calif. - Supercomputers are the gleam in every scientist's eye, useful for such data-intensive research as simulating global climate or unraveling the human genome. They work by a concept known as "parallel processing," whereby multiple computer chips execute parts of a program simultaneously. The more chips, the bigger the problem the computer can handle and the faster it can do it.

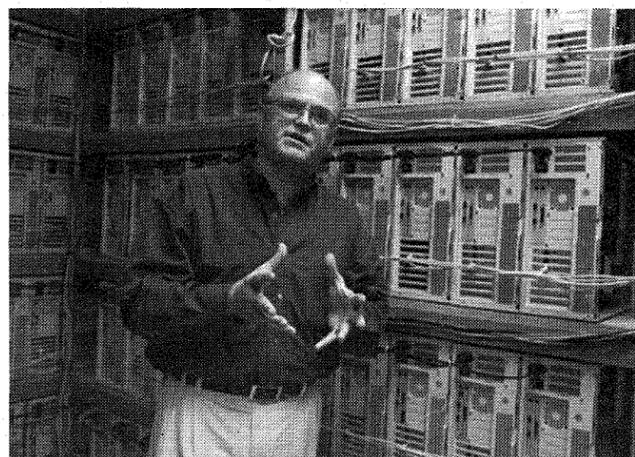
Over the last decade, says Thomas Sterling, a faculty associate in the Center for Advanced Computing Research at the California Institute of Technology, the performance of supercomputers has increased almost one thousand times, from less than 70 gigaflops, or one billion calculations per second, in 1993, to over 35 teraflops, or one trillion calculations per second, in 2003. And yet, many of today's largest systems often demonstrate disappointing efficiency, even though their size, cost, and power consumption continue to escalate. Current design strategies won't work for the next generation of supercomputers, making it unlikely they will be able to achieve the future potential speed of multi-petaflop computing (a quadrillion calculations per second).

On Wednesday, November 5, Sterling, a leader in the field of high-performance computer architecture, will discuss the challenges and the possible solutions for supercomputers in his talk "From PCs to Petaflops—The Future of Really Big Comput-

ers," the second of the 2003-2004 Earnest C. Watson Lecture Series at Caltech.

New research at Caltech, JPL, and other institutions, he says, is pushing the frontiers of supercomputers. By the end of the decade this work may revolutionize the way in which such computers are built and operated, and solve the problem of performance degradation. Sterling's talk will describe the very biggest computers ever built, and predict what future supercomputers will look like and what they may be able to achieve.

Sterling's lecture will take place at 8 p.m. in Beckman Auditorium, near Michigan Avenue south of Del Mar Boulevard, on Caltech's campus in Pasadena. Seating is available on a free, no-ticket-required, first-come, first-served basis. Caltech has offered the Watson Lecture Series since 1922, when it was conceived by the late Caltech physicist Earnest Watson as a way to explain science to the local community.



Dr. Thomas Sterling has been engaged in research related to parallel computer architecture, system software and evaluation for more than a decade.

Coffeehouse, Alternative Spring Break to Benefit

Continued from Page 1, Column 5

During spring break, small groups of students travel to various places, such as the Navajo reservation in Utah, San Francisco or Mexico and work on a community service project for a few days. Usual projects involve building houses, working in soup kitchens and working with inner city children.

The Coffeehouse applied for funds to improve the Coffeehouse by purchasing a new cash register. Additionally, they hope to expand their DVD collection, which is immensely popular with the students, as well as add lights to the patio and hold a party.

Another group applied for money to create an On Demand Car Share system. This would allow students to reserve a car online and they would pay for whatever time they use.

This would be particularly helpful to incoming students who don't have cars or parking spaces. The funding for this project is tentative, as the committee who reviewed the proposals has recommended funding for this proposal contingent on research that has yet to be done.

The final project that will receive money from the Moore fund is an Undergraduate Career Conference is being planned for a Saturday in February, with money from the Moore Fund.

The event is being planned by Jerry Houser of the Career Center and he is certain that this Career Conference will be different from many others, due to the fact that it will last an entire day, rather than having several short workshops spread out over several weeks.

The Conference will concentrate on helping undergraduates decide on a career that suits them, based on personality tests and other self-assessments and then looking at goals and paths that will help them work toward their desired careers.

The different sessions will be coordinated in large part by Caltech alumni, who will also come for lunch to network with the students, allowing them to practice networking and interview skills.

Houser emphasized the uniqueness of this event, stating, "I'm a believer in intensity; if you focus on something the whole day, it is a much richer experience than attending several workshops spread out over weeks or months."

The Moore-Hufstetler fund will be of enormous benefit to the Caltech community in the near future as all of these projects get started. However, it is up to the individual students to reap the benefits, thereby determining if the allocation of funds was successful.

Students, Staff Celebrate Halloween; Devils, Pimps, Percussionists Spotted



L. Tran/The California Tech

Students took a moment off from their busy mid-term schedules to have a little fun dressing up. The Center of Student Services staff sported a number of interesting costumes as well.

CALTECH CONVENTIONAL WISDOM WATCH



Caltech Coders Impress Judges: For the second year in a row, Caltech will send a team of student programmers to the ACM International collegiate Programming Contest.



ME 72: It's not quite Battle Bots, but this live action technical war is just as entertaining. Should we be proud or sad that our 'school sport' is not football but robots competing?



ME 72: It's not quite Battle Bots, but this live action technical war is just as entertaining. Should we be proud or sad that our 'school sport' is not football but robots competing?

Royal Swedish Academy of Sciences Gives Rare Double Honor to Zewail

By MARK WHEELER

PASADENA, CA — Ahmed Zewail, already honored with the Nobel Prize in chemistry, has received another accolade. The Linus Pauling Professor of Chemical Physics and professor of physics at Caltech has been named a member of the Royal Swedish Academy of Sciences. The Royal Academy is the organization that awards the Nobel Prize in physics, chemistry and economics.

Being elected a member of the academy constitutes exclusive recognition of successful research achievements. The academy members are divided into 10 classes; Zewail was elected as a foreign member of Class IV, chemistry.

Besides noting his illustrious re-

search career, the academy cited his active contribution to "promoting research and education in the Third World." "Normally after winning the Nobel Prize, you don't get elected to the academy," says Zewail, "so it was very kind of them to elect me and I hope we can bring together this and other distinguished academies to promote global science and education."

Zewail, a native of Egypt, is a member of numerous academies and societies and holds 20 honorary degrees from around the world, including one this year from Lund University in Sweden.

Currently his efforts are focused on new research areas at Caltech and on promoting awareness about the role of science in world peace. In 2001 he established prizes for excellence in the sciences and humanities for undergraduates at the American University in Cairo (AUC).

The award, named after Zewail by AUC in his honor, is intended to recognize graduating AUC students who demonstrate "extraordinary commitment to the pursuit of scientific inquiry and the affirmation of humanistic values."

Zewail was awarded the Nobel Prize in chemistry in 1999 for breakthrough research. Using ultrafast lasers in a novel way, Zewail's research team was able to observe the motion of atoms and record the transition state of a

chemical reaction, revealing, as he put it at the time, "the chemical act—the breaking and making of chemical bonds."

Prior to this breakthrough, transition states had never before been observed in real time because they happen on the timescale of a millionth of a billionth of a second, or one femtosecond. At the interface of physics and chemistry, Zewail founded the new field of femtochemistry and femtobiology.

The Royal Swedish Academy of Sciences is an independent organization whose overall objective is to foster the sciences, particularly mathematics and the natural sciences. Each year, it awards a number of prizes to deserving scientists, the, including the Nobel, which has been awarded since 1901.

Screenplay Worthwhile

Continued from Page 1, Column 5

lived, to be raised by Sweeney's archenemy Judge Turpin. And, of course, now that she's grown up the creepy old man wants to marry her.

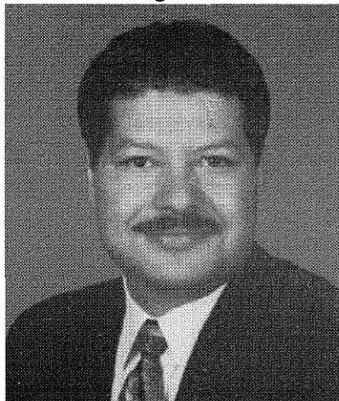
Enter the young lover, Anthony Hope (Case Bradford). Anthony spies Johanna standing on the balcony and, of course, it's mutual love at first sight and, of course they both know they want to get married before they even know each other's names. Naturally, Hope is Todd's best and only friend and the purest soul in all of London.

Sweeney Todd is a serial killer who is so overcome by thirst of revenge on Judge Turpin and the Beadle that he starts killing all of the people who walk into his barber shop, making the smooth-talking con man Alfredo Pirelli (Matthew Krogstad '06), who recognizes Sweeney as an escaped convict, the filling of one Mrs. Lovett's

meat pies.

Call me silly, but I'd rather just have the love story, uninterrupted by the gruesomeness of the murderous barber. Although both Collins (Todd) and Cooper (Lovett) were excellent in their roles, I could not connect to their characters. All of Todd's hesitations about whether to kill or not to kill left this spectator apathetic.

Despite its shortcomings, TACIT's Sweeney Todd is a darn good production. The cast is excellent, both in the main and the supporting characters. The comic relief is well-executed and the dramatic elements could certainly have been much worse. The costumes look very natural and the set is extremely artistic and well-done. Definitely a great way to spend five bucks and a few hours of your time.



Courtesy of www.its.caltech.edu

Ahmed Zewail, Nobel Laureate.

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