



Camejo Lays Out Green Take on Recall Election

By KEVIN BARTZ

Feinstein? "Her class prejudice is obvious." Nader? "He's the only one who ran against Bush." Gray Davis? "What Davis has done is beyond disastrous." And Schwarzenegger? "The man is just clueless!"

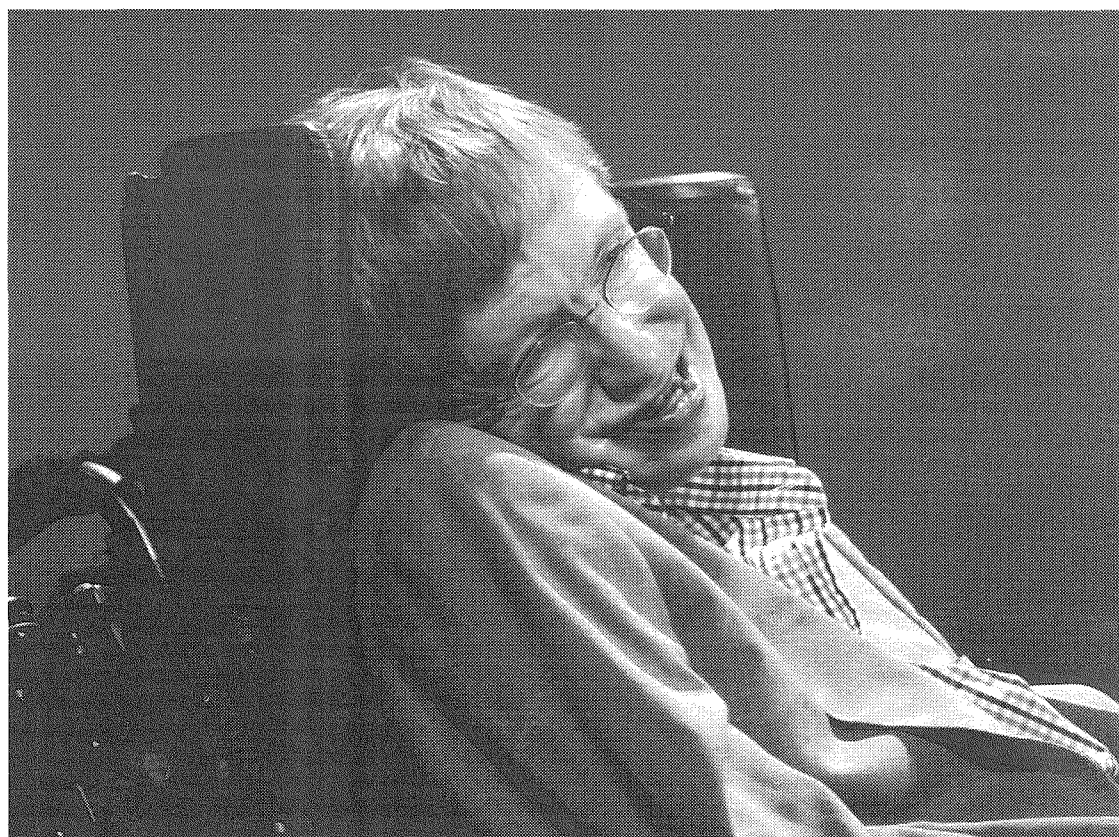
Meet Peter Camejo, proponent of peace, social justice and ecological harmony—as well as feisty gubernatorial contender in tomorrow's special election. Unpacking his views before a student-packed Baxter crowd last Tuesday night on everything from the recall to California's fiscal woes to foreign policy and national security, the MIT grad turned environmental crusader on a final-week campaign swing spoke out for the party he views as most in tune with "living social movements": his very own Green Party.

"Right now, transfer of wealth controls the process," he said. "Politics

needs to be based on one person, one vote." The Green Party, in contrast, "is not just an ecological party; we're a social justice party, we're a peace party. We're a true reflection of living social movements."

Spinning varied commentary on a full spectrum of American politiana, Camejo extrapolated these traditional Green themes—proportional representation, social liberty, ecological conscience—in an effort to craft and carefully defend his hodgepodge political philosophy. He's left-of-center, to be sure, but somewhere between calling for Davis's ouster and dubbing Schwarzenegger a "dangerous menace," you'll find a good old-fashioned nip of independence percolating in this proud-to-be-an-activist Green.

Following a brief foreword by organizer and ASCIT Vice Presi-



D. Korta/The California Tech

Lucasian Chair Physicist Stephen Hawking enjoys himself as he addresses a large crowd on the progress of the ultimate theory. Hawking outlined setbacks scientists have faced in their research.

Problems Hinder Search for Unified Theory; Hawking Now Suspicious

By AM SEARS

Cambridge physicist Stephen Hawking, famous for his popular introductory books to cosmology and his work on black holes, gave a public lecture to an apacked house Friday evening at the Beckman Auditorium. He discussed the direction that physics must take in the 20th century and beyond. In particular, he addressed the problems that plagued physicists trying to find an ultimate theory of the universe.

The ultimate theory scientists are searching for is one that would al-

low complete prediction of the future and backtracking through the past, given enough information about the present. This is no longer as easy as it may once have seemed. Modern developments have told us that the position and speed of every object is not enough to forecast the future, and that it is even impossible to know these two factors perfectly.

So, instead of these simple parameters, a different indicator called the wave function is necessary. Furthermore, this is all well and good, until you throw gravity into the mix. Though a necessary consideration in any "final theory," scientists are unable to solve equations involving

quantum gravity in the normal fashion. The solution, supergravity, was soon swallowed up by the more general string theory, and finally appropriated into a group of laws called M Theory.

According to Hawking, M Theory is "a collection of theories, that look very different, but which describe the same physical situation." None are completely general though—all need different assumptions to be valid.

In the second half of his talk, Hawking tried to tie the incompleteness of mathematics to the unavoidable insufficiency of physics. Just as Godel showed that no small set of laws could prove everything in

Continued on Page 8, Column 3



D. Korta/The California Tech

Green Party gubernatorial contender Peter Camejo displays a bar graph showing disparities in tax rates paid by rich and poor.

MPAA Head Outlines Life, Views

By ROBERT LI

To kick off the 2003 Lee A DuBridge Distinguished Lecture Series, Caltech invited MPAA (Motion Picture Association of America) president Jack Valenti for a conversation with LA Times reporter James Bates.

Held in the Beckman Auditorium on Thursday, the event was attended by Caltech President David Baltimore and many heavy hitters of the entertainment industry. The format for the conversation consisted of short questions posed by Bates followed by lengthy replies from Valenti.

In the first hour of the hour-and-half conversation, Valenti talked extensively about his past and his experiences working with Lyndon B. Johnson. Born of Sicilian immigrants who moved to Texas at the turn of the 20th century, Valenti had intended to become a naval aviator in WWII. The Navy, however, turned him down because he had a heart murmur and Valenti went instead to the Army Air Corps. During WWII, Jack Valenti flew 51 missions as a B-25 pilot and received the Distinguished Flying Cross. Summing up his war experiences, Valenti described WWII as a time of "great clarity" for the nation and said that while he was scared on every mission, he and everyone else in his crew "always did their job."

After the war Valenti went back

to Texas and worked as an advertising and political consultant. In 1955, he met Lyndon Johnson, then a Texas senator and started working for him.

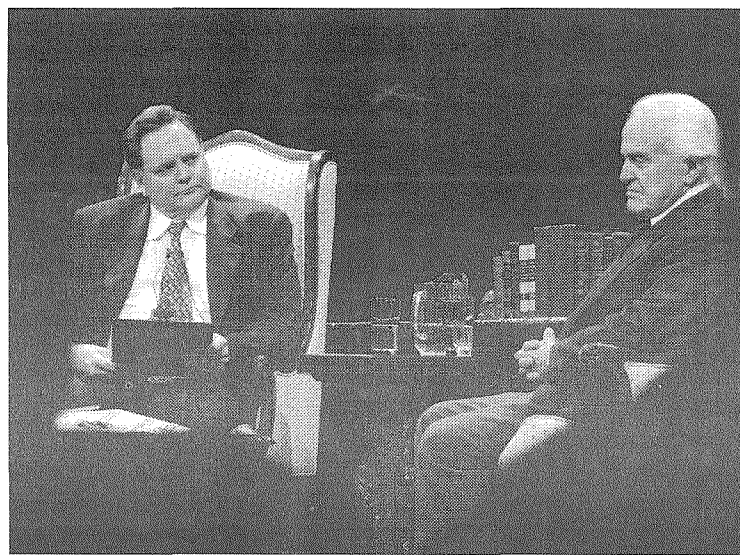
Of LBJ, Valenti said that Johnson completely dominated any room he was in and "there was no question who was in charge." Valenti later worked with Johnson on the 1960 John F. Kennedy presidential campaign and was instrumental in helping JFK carry Texas. In 1963, Valenti was in the motorcade in Dallas when JFK was assassinated. He described being rushed first to the hospital and then to Air Force

One where he witnessed the swearing-in of Johnson. In the famous photograph of that event, Valenti can be seen as the "bewildered young man in the lower left corner."

From 1963 to 1966, Valenti worked as a special assistant to LBJ and in a famous 1965 quote, said that "I sleep each night a little better, a little more confidently, because Lyndon Johnson is my president."

In 1966, Valenti left the Johnson administration to head the MPAA. He said that his decision was motivated by his lack of interest in re-

Continued on Page 2, Column 1



D. Korta/The California Tech

MPAA President Jack Valenti ponders a question posed by L.A. Times reporter James Bates during their conversation Thursday.

Power Plant Upgraded, Biology Labs Renovated

By MATTHEW WALKER

The past summer brought the completion of a number of renovations here at Caltech.

The largest and most impacting project to be finished was the \$11 million cogeneration plant on campus. Begun after the November 2, 2002 shutdown of the old 5.4 megawatt plant, installation on the new 12.5 MW system was completed August 2 of this year. Though the system is producing energy for the Caltech campus, it is not yet running at full capacity as tests on it are completed.

Built by Solar Turbines in San Diego, a subsidiary of Caterpillar, the gas turbine works in conjunction with a steam turbine and an extensive heat recovery steam generator to make Caltech's cogeneration plant, according to director of campus operations Reza Ohadi, "the most efficient design in the nation." Boasting a thermal efficiency of over 85%, the system will save Caltech \$20,000 in avoided costs per day that the plant is in operation, which will be 330 days per year, leaving the extra days for repairs and maintenance.

These savings will help Caltech recover its costs from the project in less than five years and reflect the reason Caltech embarked on this project: to save money. The heat from the gas turbine is converted to steam (the system produces 46,000 lbs/hr. at 300 psig), which is used to power a steam turbine. Leftover steam from this process is used to heat campus.

A benefit of this system is that Caltech no longer has to run boilers for heat for campus, adding to the efficiency of the plant. A water heater for the swimming pool is also built into the heat recovery system. From the gas turbine, to the venting stack, the heated air is reduced from over 1000 degrees F to around 330degrees F.

An added bonus is that the system, despite being twice the size of the old system, will reduce emissions by 66%. There are a series of built in emission reducing systems that have specific targets. A Selective Catalytic Reduction (SCR) component reduces NOx emissions. A CO catalyst reduces carbon monoxide emissions and an ammonia

Continued on Page 7, Column 1

Valenti Strives to Balance Copyrights, Free Speech

Continued from Page 1, Column 5

turning to the advertising industry and his desire to do something new. In the almost 40 years since then, Valenti has been the primary lobbyist and advocate for the movie industry.

One of Valenti's first accomplishments at the MPAA was the replacement of the Hayes Code in 1968 with the modern rating system for movies. The Hayes Code was a restrictive set of rules set up in the 1930s that limited the kinds of content that could be shown in movies (one rule stated that a man and a woman couldn't be in a bed together unless both had at least one foot off of the bed). In junking the Hayes Code, Valenti cited his belief in the first Amendment and the fundamental right to free speech. He also said that the new system allowed parents to choose what films were appropriate for their children.

A second major event in Valenti's career as the head of the MPAA was the introduction of VCRs in the early 80s. The movie industry at the time was horrified at the prospect of consumers being able to record movies and desperately tried to kill off the VCR. In a famous 1982 comment to the House of Representatives, Valenti said, "I say to you that the VCR is to the American film producer and the American public as the Boston strangler is to the woman home alone." A landmark suit filed by the movie industry against Sony, a maker of VCRs was resolved in a 1984 Supreme Court decision that found VCRs to have "substantial non-infringing uses" and were therefore legal. Making no mention of neither his Boston strangler comment nor the Supreme Court decision, Valenti tried to justify to the audience that the movie industry sued VCR manufacturers not to outlaw VCRs but as a strategy to make Congress charge a piracy tax on blank video cassettes.

Moving on to the current problem of movie piracy through file sharing, Valenti first stated that the movie industry was critical for the US economy and that he won't allow it to be destroyed by piracy. After touring many college campuses and talking students, Valenti says that he believes students illegally download movies because the technology is there and because there are no consequences. Jack Valenti also mentioned that no matter how the movie industry changes its business model "you can't compete with free." He likened file sharing to having two pizza stands—one selling pizza slices for \$1.50 and the other giving pizza away for free.

At the end of his conversation, Valenti mentioned Caltech's FAST project which recently transferred a DVD across the Internet in five seconds. He said that such advances in technology have enormous implications for the movie industry and that he hopes the scientific and business community can also come up with technological methods to stop piracy. On that note, the talk concluded.

Although few Caltech students were visible in the large audience, Will Fong '04 did attend and had strong comments on Valenti's statements. Regarding Valenti's assertion that it is impossible to compete with someone giving away pizza for free, Fong said that "the 10 million songs sold on Apple's iTunes Music Store shows that you can successfully compete with free." In response to Valenti's closing remarks on using technology to solve the piracy issue, Fong said that "the software industry tried in the 80s and early 90s to fight piracy using technology and they failed miserably. The music industry is trying the same methods to protect CDs, again without success. You'd think Jack Valenti would know better and realize that where there's a will somebody will find a way!"



D. Kortal/The California Tech

Valenti, who was awarded the Distinguished Flying cross as a World War II B-25 pilot, appears unfazed as he takes a moment to craft his response to another Bates inquiry.

Forum Planned to Discuss Treatments, Diagnostic Technology for Alzheimer's

By KATHERINE POULIN

PASADENA, Calif. - This characterization of the terrible disease of the brain resonates with anyone who has seen its destructive power, which now affects 10 percent of people over 64 years of age and 50 percent of people over 84.

When a patient develops Alzheimer's, specific populations of nerve cells in the brain become damaged and die. The triggers of this brain damage remain unclear,

which makes the development of effective methods for detecting and treating the disease very difficult.

A panel discussion on new Alzheimer's diagnostic technologies and treatments will take place at 8 p.m. on Tuesday, October 14, in Beckman Auditorium at the California Institute of Technology, 332 S. Michigan Avenue in Pasadena. This event, "Remembering the Past, Imaging the Future: Diagnosing and Treating

Alzheimer's Disease," is the ninth Caltech Biology Forum. It is free, open to the public and tickets are not required.

The panel is composed of three prominent Alzheimer's researchers: Jeffrey Cummings, MD, director of the Alzheimer's Disease Research Center, UCLA and president of the board of directors, Alzheimer's Association; Scott Fraser, PhD, Anna L. Rosen Professor of Biology, Caltech; and John Mazziotta, MD, PhD, John Mazziotta, MD, PhD, chair, UCLA department of neurology and director, Ahmanson-Lovelace Brain Mapping Center at UCLA. Robert Lee Hotz, science writer for the Los Angeles Times, will moderate the discussion.

Alzheimer's disease is the leading cause of dementia (the deterioration of thinking skills) in the elderly. Its primary symptoms include increasing forgetfulness and memory loss, difficulty with reasoning and judgment, disorientation, decreased language skills and trouble with routine tasks. Alzheimer's can also lead to changes in personality, such as depression, agitation, anxiety and, in extreme cases, delusions and hallucinations.

The disease usually progresses gradually, making early detection challenging. The current method of diagnosing Alzheimer's involves employing a variety of behavioral tests, none of which are definitive. In addition, there are two kinds of abnormal brain structures associated with Alzheimer's, plaques and tangles. Visualization of these structures may someday aid doctors in their diagnosis of the disease and the panel will discuss the promise of the technology.

To date, there is no cure for Alzheimer's disease. Although there are medications that can partially alleviate the symptoms, full loss of memory is inevitable. The panel will discuss new treatments on the horizon.

The forum is sponsored by Caltech in conjunction with the Alzheimer's Association and the San Gabriel Valley Newspaper Group.

From Fair Taxes to Clean Energy, Camejo Weaves Political Tapestry

Continued from Page 1, Column 2
dent Galen Loram '03, Camejo opened his talk with a barrage of criticisms aimed at embattled Governor Gray Davis, mostly for perceived pandering to business interests in the energy crisis. Calling into question dubious negotiations, Camejo hammered Davis for a "conscious effort to take away the surplus."

"That is the worst investment any human has made on the face of this planet!" he exclaimed. "He could've hedged; you always hedge in this line of business. That's the ABC of finance." Donning the hat of his longtime career as a personal financial advocate, Camejo dubbed Davis's financial moves "atrocious" and pressed for a breakup of the moneyed interests he believes wangled Davis into the fruitless contracts. "We need to remove company boards and replace them with law-abiding citizens," he said.

Irresponsible fiscal policy, though, is just icing on the cake for a governor so socially oblivious, Camejo held, that he'd once refused to lighten the life sentence of a petty thief on his third strike. "This is the kind of man Davis is," he said. The Green standard bearer also extrapolated his criticism to a Democratic Party he calls out of touch, one for which the recall represents "total collapse."

The result is the alienation of America's progressive lines of

thought. Not only was Nader the only true alternative to Bush in the 2004 election, said Camejo, but prominent Democrats actually aid Republicans by trading progressivism for votes.

"What Democrats do is remove opposition to the Republican platform," he said. "I understand we're all in a box; we Greens are challenging that." The chief offenders? There's Dianne Feinstein, whom Camejo chastised for voting for the war, supporting vouchers and refusing to back Bustamante. There's Al Gore, whom Camejo described as indistinguishable from Bush. Even Cruz Bustamante Camejo deemed too conservative, citing the lieutenant governor's support for Connecticut Sen. Joe Lieberman.

"Either you accept dysfunctional, corrupt government or you get a Republican," charged Camejo. "How do you get Mussolini elected? Run Hitler against him!"

But the problem in Camejo's eyes is broader than a party or a person. Rather, it lies on the shoulders of the corporations snatching "the highest profits in history." It lies on the shoulders of the unions perpetuating "elemental corruption in their political marriage to the Democratic Party." It lies on the shoulders of a media who before the World Trade Center attacks "played to [terrorism], encouraging these groups, and then September 11 happened and they all shut up."

The Green financial adviser's bottom line? America needs a vast return of power to the people. "There's been a huge transformation as to who owns America over the last 10 years," he said. For evidence, Camejo pointed to a bar graph of tax rates showing the poorest paying the highest rates and the richest, the lowest. The *L.A. Times*, he said, had refused to publish the chart. "Apparently, it's okay to gouge the poor, but not the rich," he scoffed.

Camejo also took the time to trumpet the perhaps better publicized environmental planks of the Green platform, laying out his tactics to breathe life into the clean energy movement: "We need to stop burning carbon; we're destroying the planet. California should become the leader in renewable energy. But someone has to provide the demand to get the manufacturing costs down."

By the same token, Camejo advocated not only social tolerance—he's pro-choice and supports gay marriage—but also a full range of social programs to keep down the costs of health care and housing rents. "We need to stop regressive taxes; these are taxes on the poor," he said.

Camejo also raised the yolk of the common man in his support for proportional representation and pre-election runoff, two schemes that would link representation to precise

breakdowns of party affiliation and boil down candidate pools to two candidates prior to elections. "We're the only country in the world without runoff elections," he maintained. "There are no runoffs so as not to allow third parties to form." To this end, Camejo cited also a groundswell of back-door opposition to his participation in recent televised gubernatorial debates.

To be fair, the Green contender had blessings as well as barbs for his major-party opponents. Although he disagreed with Tom McClintock, Camejo praised the state senator now running third in the race for honesty, straight talk and a genuine interest in public policy. He disagreed even more vehemently with Bill Simon, but applauded the withdrawn candidate for inviting the Green Party to an early debate. He disagreed with the bulk of Bustamante's platform, but hailed the Mexican-American lieutenant governor born to a farm-working family of eight as a true American success story.

But in a larger sense, it's all part of Camejo's people-focused take on the politics of the day. "We need to listen to the people we disagree with," he said. Chuckling that he'd happily invite even McClintock aboard for fiscal advice in a Camejo administration, the candidate closed, as you might expect, with an overture to the "living social movements" he holds dear: "We in the Green Party understand that it's not money or power or wealth that's important in the long run. It's human relationships."

Problems in California Not the Fault of Davis,

By DARIO AMODEI

For three months I have been bombarded with the dual faces of Arnold Schwarzenegger and Cruz Bustamante. I've gotten to hear about Schwarzenegger's exploits with steroids and group sex, and about Bustamante's possibly shady financial ties with Indian casinos.

But behind the inane frenzy there seems to be a dim recognition that something unprecedented and portentous is happening. Tomorrow we might remove our governor from power, and it is crucial that we understand the implications of that decision.

Fundamentally, tomorrow's election has little to do with Arnold Schwarzenegger or Cruz Bustamante or Tom McClintock, or even with Gray Davis. Tomorrow's election is a challenge to the basic stability of state electoral politics, brought about by a small band of extremists devoid of any respect for democracy. It is a cynical grab for power by those who would throw California into chaos just to have their party in control. It must be stopped, and I will try to explain why.

The recall provision has been part of the California constitution since 1911, but tomorrow will be the first recall election in California history. Similar provisions exist in 17 other states, but this will be only the second gubernatorial recall election in United States history. Why have there historically been so few recalls? What has changed to make a recall possible now? The answers to these questions will lend us insight into the delicate balance that tomorrow's fiasco threatens to over-

turn.

To hold a recall election requires the petition signatures of eligible voters amounting to 12% of the number of people who voted in the last gubernatorial election. With turnout typically below 50%, this amounts to about 5% of the voter-eligible population of California.

That's a surprisingly low number which is almost always obtainable in principle. Any governor is despised by at least a quarter of his constituency, so all that is necessary is to get one in five of those people to sign. And there has never been a shortage of people angry enough and rich enough to organize the collection of those signatures. Nothing could be easier, right? Yet every four years there has been a recall petition and until now every such petition has failed. Why?

The answer lies in precedent and unwritten rule. Not everyone who

"Some very complex things have gone wrong, and Gray Davis makes a convenient target..."

hates the governor is willing to recall him. Until recently, the recall amendment was so obscure that most voters were not even aware of it. Among those who know it, it is viewed, or ought to be viewed, as an extreme measure to be attempted only under the most extraordinary of circumstances, such as specific fraud or corruption. To recall the governor is to impugn a legitimate election and there had better be a very good reason for doing so.

In that spirit, many of my conservative friends were opposed to the recall when they first heard of it. The typical viewpoint was: we don't like this guy, but we're not willing to use a bizarre constitutional gimmick to remove him. It is this admirable aversion to dirty tricks which has previously kept recalls in check, and I fear that if we lose our restraint there will be no going back.

If we vote Gray Davis out of office tomorrow, we will be sending a message to extremists that open season on state officials can begin. The notion of recall will move in the minds of the public from a dirty trick to an effective political tactic. Already several groups have sworn to recall anyone who replaces Davis. Large contributors will be more willing to fund such future recall efforts because the tactic will have been demonstrated effective.

Once recall ceases being in the domain of strange and uncharted political waters, people will be more willing to contribute the time and manpower necessary to obtain hundreds of thousands of signatures.

Imagine a recall every six months. This special election cost \$65 million dollars; what if we had to pay that amount twice a year and repeatedly tolerate the media circus surrounding it? With the governor fighting for his life every six months, the already severely inefficient state government would ground to a complete halt. Endless power struggle is the last thing we need, especially in California's dire economic situation.

So far I have explained the potential damage of recalling any governor. If that isn't reason enough to vote no, it's also true that recalling this particular governor would be bad for California. Davis is a competent if somewhat unpopular public servant who has done nothing to deserve the attacks he has been

subjected to. All of the charges leveled against him are fairly easy to dismiss.

The most frequent complaint is the \$37 billion dollar deficit California faces and the economic crisis it implies. Supporters of the recall often compare Davis to the CEO of a failing, debt-ridden company, but they fail to indicate how Davis is at all responsible for the economic situation. In fact, according to indicators compiled by the independent Center for Continuing Study of the California Economy, California's job trends have not differed significantly from those of the rest of the country in the last three years. In other words, the bad state of California's economy is merely a reflection of the bad state of the U.S. economy. Even Peter Ueberroth, the third most popular Republican candidate to replace Davis (he has since dropped out of the race) admitted that Davis is not to blame for the state of the California economy.

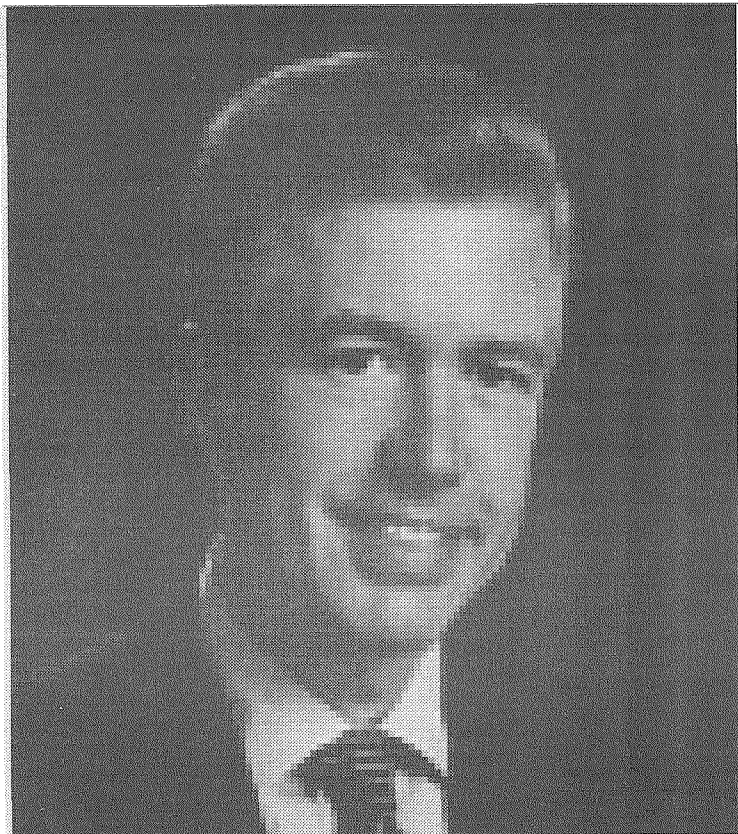
But what about the energy crisis, which surely contributed to our current state of economic woe? Davis is absorbing much of the blame for it, but no one seems to remember that the energy crisis was a consequence of two things: former Governor Pete Wilson's "energy deregulation" and Enron's manipulation of the California energy market. Here's what happened: Wilson set up an imbecilic deregulation scheme under which wholesale energy traders could charge any price they wanted from energy retailers. Because power cannot be stored and is difficult to live without, a momentary shortage gives the seller unlimited bargaining power. Enron and other out-of-state wholesalers were able to manipulate the market by intentionally shutting down plants "for repairs" and thus artificially created an energy shortage. This is not hearsay—all of it was made public when Enron went bankrupt.

Because energy on the spot market was so expensive, Davis had little choice but to sign a deal for the state to buy energy at a long-term fixed price. Supporters of the recall point to this as one of his mistakes, but in fact it was a prudent action to minimize damage—the prices Davis signed for may have been inflated, but they were many times lower than the prices paid on the spot market. Perhaps a better solution existed, but Davis' move was reasonable given the state of emergency. Those who would blame him should think long and hard before they vote into office someone (Schwarzenegger or McClintock) who approved of Pete Wilson's disastrous deregulation scheme.

Finally, recall proponents claim that Davis lied about the budget deficit before the last election. There is simply no evidence to indicate that this is the case. All that recall proponents can point to is that Davis' office declared the deficit at \$23 billion last year and \$37 billion this year. While the increase is significant, it is not above what would be expected for an economy in recession.

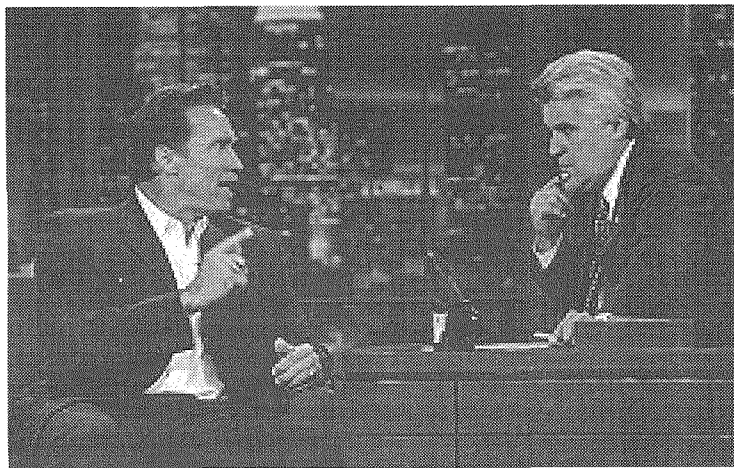
In the final analysis, this recall is nothing more than a knee-jerk reaction to problems which are outside the state government's control. Some very complex things have gone wrong, and Gray Davis makes a convenient target for those who would profit from his ouster. It is doubly disturbing that his enemies are so obsessed with replacing him that they are willing to endanger democracy to do it. Don't help them.

Vote NO on the recall and bring sanity back to our state.



Courtesy of www.governor.ca.gov

Gray Davis is currently still serving his second term in office as governor of California. Opinions are split on his role in California's current economic situation.



Courtesy of www.sacbee.com

The lights and shows go on: Arnold Schwarzenegger appears on the Tonight Show with Jay Leno to declare his entry into the governor's race.

CA Governor Race Update: Allegations Against Arnold

By KEVIN BARTZ

Mudflew this past week in California's unprecedented and widely anticipated recall race. In a sequence of reports this week, The Los Angeles Times brought to light the stories of 15 women who have come forward with sexual harassment charges against the Republican Schwarzenegger. The allegations range in date from 1975 to 2000. The most recent group of four, reported Sunday, includes three named women claiming Schwarzenegger fondled them in gyms, bars and movie sets in the late '70s and early '80s as well as an anonymous 51-year-old woman alleging that just three years ago Arnold assaulted and spanked her repeatedly on a post-production set.

When the first of the accusers came forward earlier this week, Schwarzenegger issued a tempered apology, chalking up the incident to rowdy movie sets and promising to be "a champion for the women." After the next wave, the former body builder dismissed the series of reports as "puke politics" by the Davis campaign.

Attorney General Bill Lockyer called on Schwarzenegger Sunday to submit himself voluntarily to an investigation, although the statute of limitations would prohibit prosecution.

Fellow Republican gubernatorial candidate State Sen. Tom McClintock agreed, asserting that if the allegations are indeed true, Schwarzenegger is unfit to be governor.

On the heels of the groping charges came a separate report that

Schwarzenegger once praised fascist leader Adolf Hitler. A rough draft of a book proposal by George Butler, director of the Schwarzenegger-starring "Pumping Iron," quoted the Republican front-runner: "I admired Hitler, for instance, because he came from being a little man with almost no formal education, up to power."

From there, reports diverged: some sources pegged Schwarzenegger admiring Hitler for being a good public speaker and for what he did with it—other sources, in spite of what Hitler did with it. Schwarzenegger has said that he does not remember the comment.

Ballots in Tuesday's special election, California's first gubernatorial recall election in decades, feature two questions, the first asking whether to replace Davis and the second asking who should replace him. If Davis can't muster a majority on the first, the candidate with a plurality on the second takes the office.

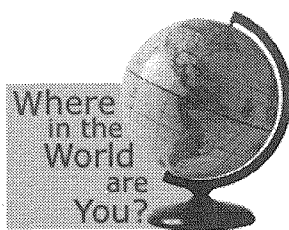
Polls presently show a vast majority of voters displeased with Davis, although only a slim majority—54 percent to 41% according to the latest Knight Ridder/NBC News poll released Saturday night—want him recalled. Five percent are undecided. On the second question, polls were initially scattered but have more recently converged to reveal a likely Schwarzenegger victory. The Knight Ridder poll places the actor at 37% to Lt. Gov. Cruz Bustamante's 29% to McClintock's

15%, while a SurveyUSA poll released Wednesday gave Schwarzenegger 45%, a somewhat more comfortable lead over Bustamante's 28% and McClintock's 16%.

Two possible sources of swing votes are supporters of Green Party candidate Peter Camejo, lingering at around 5%, and those of recently withdrawn commentator Arianna Huffington, who directed her 3% Thursday to vote against the recall and for Bustamante.

The other contentious question on Tuesday's ballot is Prop. 54, a statewide initiative that would prohibit state and county governments from collecting racially and ethnically subsetted data, which proponents call a crucial step towards a colorblind society and detractors call a means of shrouding lingering racial inequities. The measure is the handiwork of conservative African-American University of California Regent Ward Connerly, who is trying to duplicate the success he had seven years ago banning affirmative action in statewide public education.

At Prop. 54's outset, polls showed a majority of voters in favor, although that advantage eventually faded and now even Connerly has predicted his measure will fail. Saturday's Field Poll found just 35% in support compared to 49% against. All the major gubernatorial candidates except McClintock have come out against Prop. 54.



A Return to Weekly Olive Walk ASCIT Meetings, Diversity, We Are Scientists!

By TOM FLETCHER
Rotation Ends, Let's Get Going!

Now that rotation has ended, it's time to get go about the school year as normal. The ASCIT BoD will be having its first meeting of the year this week, during lunch, on a date yet to be determined by the board's schedules. These meetings are held in the open, on the Olive Walk, and your attendance is encouraged. We are responsible for acting on the behalf of the student body, and it's only possible when we know how you feel. We also can only act on issues you make us aware of.

On a related note, if you were in Ch/APh 2 last year, I would like to talk to you. Due to the conduct of the class during the school year, the reputation of the faculty and the institute suffered, and only through your voluntary help can it be repaired. If you are interested in helping, please email (*tomf@its*) or call me at x. 1052.

Who I Met With This Week

Due to the all-consuming importance of rotation, I did not conduct any noteworthy official ASCIT business this week. I am preparing for the Faculty-Board meeting on Tuesday. Of particular interest to the students will be the report of David Goodstein's academic oversight council. If you have an opinion, please share it with me. If you want more information, check online at *oof.caltech.edu*.

Also of interest is our new interim Director of Admissions, Dan Langdale. He is very interested in talking to students and reacquiring his feel for the school (he worked here in admissions in the past, then went to MIT). Please try to make him feel welcome on campus and share any concerns or ideas about admissions with him.

A Missed Opportunity This Summer

President Baltimore wrote an important, yet overlooked (in my opinion), letter to the community this summer. It was emailed to the campus on August 15th by Directory Staff. The letter was intended as an assessment of how Caltech was dealing with the Supreme Court rulings of the previous term in the Bollinger cases. The letter opens by addressing Caltech's admissions policy and where it stands in regard to the court. As the absence of African-American students with freshman status on campus may hint at, Caltech does not include race in its formulations for admissions.

What is more important is the second paragraph, especially the closing lines: "As part of our review process, we also examined our outreach and enrichment programs and determined to broaden eligibility and selection criteria. The Institute has received inquiries about its compliance, and we are in compliance with the law."

What is hinted at here is the one-man crusade (google Ward Connerly) to undermine minority programs on campuses across the country. From what I have observed of the programs in questions, Caltech tweaked its programs to invalidate the lawsuits and duck the issue.

I have two qualms with this. One, some of the tweaks to effective programs like Graduate Preview and Freshman Summer Institute could damage their effectiveness in the future. I am loathe to use the word will since it implies certainty, but I fear that some of the aims of the programs will be compromised by these changes. The second is that, from my reading of the laws in question, Ward Connerly's lawsuits were baseless. Caltech could have

successfully defended its programs in a court of law, and won, accomplishing numerous benefits. One, Caltech's programs would be preserved. Two, similar lawsuits against other schools could be challenged without fear, and thus prevent the nationwide shutdown of valuable programs that is occurring out of fear of litigation costs.

Third, most importantly and cynically, is that defending these programs in court would have enhanced Caltech's reputation. At present, Caltech suffers from the perception of not being a good school of qualified minority students.

As I am sure the University of Michigan will see in years to come, standing up for their students will inspire trust and appreciation in future generations of students. The enormous publicity that would have resulted from such a legal challenge cannot be bought by media relations at any price, and would have had only positive consequences in the sectors of society we spend so much

effort trying to reach out to.

I do not intend to sound wholly contrary; I think Dr. Baltimore's statement was excellent in many points. When he says, "Caltech will continue to vigorously pursue its diversity goals. As a leading institution of science and engineering, Caltech has a responsibility to the country to educate a diverse group of students, individuals we hope will become important contributors to our society. We wholeheartedly embrace this responsibility," I do not think I could ever have said it better. I applaud this stance and thank him for taking it; I am merely saddened by the failure to go all out, risk some legal fees, and possibly strike a resounding victory. I think a major opportunity was missed, but I do not think the window for action on this issue has closed.

What I think would be most useful to the Caltech community at present would be to actively use the letters section of *The California Tech* to discuss this issue and develop an idea of where we are, what we believe in, and what we feel is worth standing up and fighting for.

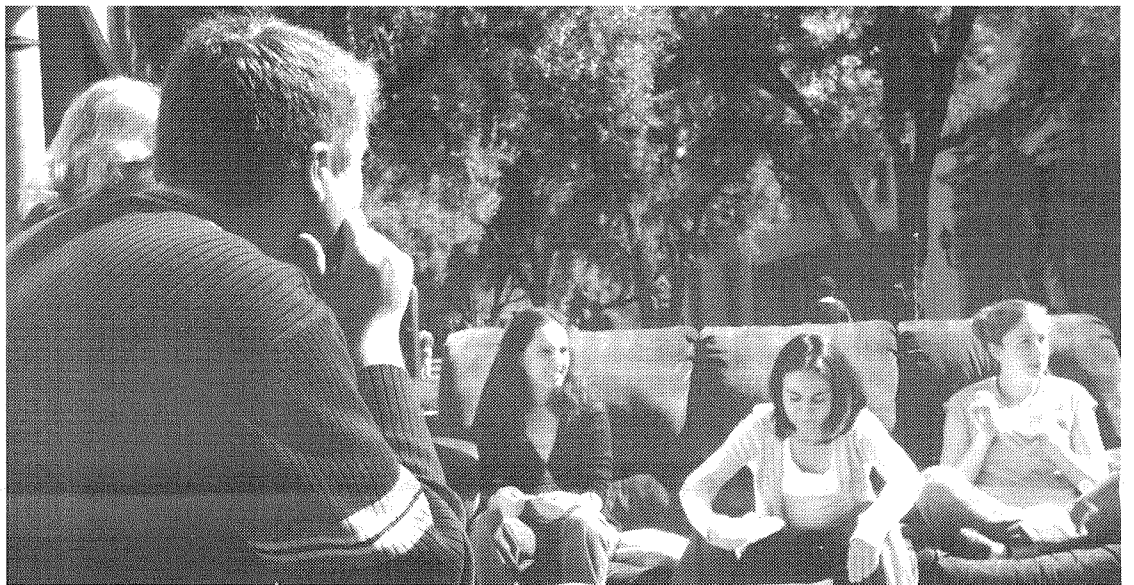
We Are Scientists and We're Missing One Social Director

Our fearless formal-organizing social director Kim Hiscox is living it up at Duke, which she has accurately described as "hot, easy, and damp." Interpret as you will. What this indirectly means is that we need a new social director to organize events for the next term and a half. With formal done, the social director's responsibilities are considerably less than normal (for those of you who are less motivated).

Sign-ups will go up soon, interviews are on October 14th (tentatively). One event that you may have to organize as social director will be the rocking return of We Are Scientists! The crazy trio rocked the Dabney Lounge last spring and loved playing Caltech so much that they're trying to find a way back to Los Angeles. (this is a 3,000 mile trip for them!).

We're negotiating with them to play in late October, between the 24th and 29th. If you want them to play your specific venue on campus, prefer acoustic or electric, or have a date preference before I book them to a date in there, please let me know.

Peace out Caltech,
Tom Fletcher
PS: The *little t* is at the printers. We will have an exact date soon.



The ASCIT BoD convenes for another Wednesday meeting on the Olive Walk.

The Longest Week of the Year: Rotation

By CECILIA YU

Thanks to Rotation, I now have a colorful collection of cards bearing my name. So if ever I am in need of introduction, I have a plethora of choices. As one frosh has labeled his collection displayed on his door: "They're all fine name tags."

But what has Rotation provided for me besides amusing stick-on labels? First and foremost, I found the week gave me a grand challenge: to keep my mouth shut.

Unsure of what would be deemed as inappropriate bias by the Board of Control, and having been plentifully assured that any possible loophole that a devious mind could conjure does not exist, I learned that the best chance to avoid the wrath of the BoC ninjas was to simply shut up. I believe this provided me with the insightful opportunity into the world of not spreading rumors; generally a surprisingly useful capacity when in such a close-knit community.

Second: the great chance to meet all those wonderful upperclassmen. I found them brimming with excellent advice ("Classes you can skip-Ma1a, Ch1a, Ph1a"), and an incredibly genial attitude ("Pass/fail frosh!"). They gave more great advice ("What's your major? [Insert answer here] is terrible! What are you doing here?!"), and showed true concern for our welfare ("Sleep at 3 am? That's two hours too early").

Overall, I think I got a great feel for the true character of my fellow Techers. And of course, the most important part of rotation was find-

ing out the spirit and personality of each house in order to find the closest match to our own individual natures.

The rotation tradition mystified me at first. I spent over two weeks in correspondence with friends and family explaining how my living conditions were not permanent, that I would instead have to choose another house, and how I would consequently have to move again.

For my part, when I first heard about rotation, I found the idea innovative and exceptionally sensitive to the needs of the students. After a week of dining at each house, I still find the idea uniquely thoughtful, but fantastically tedious. Upperclassmen had warned me of the dangers of stock questions: "Where do you come from?" "What is your major?" and my favorite, "What do you like to do in your spare time?"

Even with conversation spicers like existential literature and cat ears, by the end of the week, the entire process of meeting and greeting had plummeted to monotony. Still, I persevered in collecting name tags, enjoying the splendid Caltech cuisine, and making delightful small talk with house members. I found the house videos, for the houses with enough motivation to make one, fascinating and often hilarious. There were the obviously well-planned and executed ones, the procrastinator's choice awards recycled ones, but all of them provided the desired amusement. Everyone needs a good "Superfluous Lightsaber Fight" once in a while.

While the dinners at each house were entertaining and allowed each to identify themselves, the lunches seemed to me rather inane. Not that I did not appreciate free lunch for a week, but that was about the only thing I got out of it. Most of the upperclassmen were either at class or simply could not muster the willpower necessary to endure another session of stock question and answer. I could not find many house members to talk to, and on the whole, most people appeared more interested in their food than providing a genuine description of their house. Trying to stay enthusiastic and curious about each house eventually wore me down, but it's much more difficult to keep up the attempt when the upperclassmen stop caring. In the end, almost everyone looked tired and ready for permanent dwelling assignments.

Despite the weary path of rotation, however, I am thankful that Caltech is unique in its traditions, and that those traditions are truly kept for the sake and welfare of its students. One upperclassman made a surprisingly profound metaphor: Caltech is like Hogwarts. There are houses to choose from, and each house has not only individuals comprising it but its own personality and traditions to match.

I am thankful for the opportunity to experience each house, and to be utterly cliché, they are all fine houses. But wouldn't it be easier with the sorting hat? I know one member of the administration has one, but I'm sure they would not want to deprive future pre-frosh of the excellent experience known as rotation.

Feynman Prize Looking to Honor Great Teaching

By STEVEN KOONIN

I am writing to ask your help in identifying candidates for the Richard P. Feynman Prize for Excellence in Teaching, endowed through the generosity of Ione and Robert E. Paradise, with additional contributions from Mr. and Mrs. William H. Hurt. The Feynman Prize is awarded annually according to a professor who demonstrates, in the broadest sense, unusual ability, creativity, and innovation in undergraduate and graduate classroom or laboratory teaching.

The prize consists of a cash award of \$3,500, matched by an equivalent raise in the annual salary of the awardee. All professorial faculty of the Institute are eligible.

Guidelines for the prize are attached. Nominations are welcome from faculty, students, postdoctoral scholars, staff, and alumni. Please submit detailed nomination packages to the Provost's Office by December 15, 2003.

Teaching is one of the primary functions of the Institute and it is appropriate that we recognize those who do it well. I therefore ask you to take a few minutes to think and nominate and to bring this opportunity to the attention of others.

Former Feynman Prize Recipients:

- 2002-03 Niles Pierce, Applied and Computational Mathematics
- 2001-02 Joseph Kirschvink, Geobiology
- 2000-01 David

- Stevenson, Planetary Science
- 1999-00 Donald Cohen, Applied Mathematics
- 1998-99 Emlyn Hughes, Physics
- 1997-98 Barbara Imperiali, Chemistry
- 1996-97 R. David Middlebrook, Electrical Engineering
- 1995-96 Yaser Abu-Mostafa, Electrical Engineering and Computer Science
- 1994-95 Erik Antonsson, Mechanical Engineering
- 1993-94 Tom Tombrello, Basic and Applied Physics

A letter of nomination and detailed supporting material (including, but not limited to, a curriculum vitae, course syllabus or description, and supporting recommendation letters) should be directed to the Office of the Provost, Mail Code 206-31, at the California Institute of Technology, Pasadena, California, 91125. The Provost's Office will compile teaching evaluations for all nominees for courses taught during the prior academic year. Nomination packages are due by December 15.

Selection of the recipient will be made by a committee appointed by the Provost.

Further information regarding the prize or nomination procedure can be obtained from Stacey Scoville in the Provost's Office (626-395-6320; *staceys@caltech.edu*).

Pasadena to Hold a Night of Art, Artifacts, Music and Celebration

By LINDA CENTELL

The tenth Art Night Pasadena on Friday, October 10, from 6 to 10 p.m. is designed for the public to experience the quality and variety of art, cultural artifacts and music offered by the museums and cultural institutions in this mid-sized city.

Art Night Pasadena developed out of a collaborative exhibition in early 1999 among the city's art institutions called "Radical P.A.S.T.: Contemporary Art & Music in Pasadena, 1960-1974."

The collaboration and opening night were so successful that the participating institutions agreed to have an Art Night Pasadena in November 1999.

Ten Pasadena venues will open their doors for free and city-sponsored shuttles will provide free transportation between the venues during this semi-annual event. The main shuttle stop is near Raymond Avenue and Holly Street, near Armory Center for the Arts and the Memorial Park Station of the Metro Gold Line. Arriving by Metro Gold Line is encouraged, or participants may park at any venue and ride shuttles to the other nine.

Collaborating venues are the Armory, Armory Northwest, Art Center College of Design, Norton Simon Museum, One Colorado, Pacific Asia Museum, Pasadena City College, Pasadena Museum of California Art, Pasadena Museum of History, Pasadena Symphony at the Civic Auditorium and Southwest Chamber Music at the Norton Simon Museum. For a map go to <http://www.pasadena-culture.net>. The event is sponsored in part by the City of Pasadena Arts Commission Cultural Trust Fund.

Close to 6,500 people visited one of the eight venues during the last Art Night in March 2003.

This is the tenth Art Night Pasadena.

Exhibitions and presentations:
Armory Center for the Arts
145 N. Raymond Ave.



courtesy of www.sgymedia.com/Pasadeasym.com

The Pasadena Symphony will be one of the 10 art venues open and free to the public this Friday, October 10.

We've Moved: Cal Arts Graduate Student Exhibition

California Institute of the Arts, one of the country's most innovative and respected art schools, in conjunction with the Armory, presents an exhibition of work by 37 recent graduates of the CalArts Master of Fine Arts program. A variety of media will be on view, including painting, sculpture, photography, video, and installation.

Armory Northwest
284 E. Orange Grove Blvd.
In the Nursery

An installation art exhibition celebrates the new Armory Northwest location on the former site of Hortus Nursery. The extensive trees and plantings at this facility along with its history have inspired works that pertain to nature, childhood and a world somewhere in between. Armory Northwest partners, including AIDS Service Center, AMAN Dance & Music, Conservatory of Puppetry Arts, Latino Heritage Association and Side Street Projects will also participate.

Art Center College of Design Student Gallery
1700 Lida St.

Visit Art Center's renowned Student Gallery and glimpse the future through the eyes of some of the world's most talented students in automobile design, furniture, fine art, illustration, film, photography, graphic design, advertising, and digital media. A live string quartet from The Pasadena Young Musicians Orchestra will perform.

Norton Simon Museum of Art
411 W. Colorado Blvd.

Treasures from the Himalayas: Sacred Images from Tibet, Nepal and Northern India

Known as one of the most remarkable art collections ever assembled, the Norton Simon Museum houses seven centuries of European art from the Renaissance to the 20th century and Asian art from the 1st to the 20th century. On display is Treasures from the Himalayas: Sacred Images from Tibet, Nepal and Northern India. This exhibition features over 20 sculptures, paintings and wooden book covers from the Museum's collection.

Norton Simon Museum of Art, continued

Southwest Chamber Music

Southwest Chamber Music will perform two musical masterpieces in the Museum's Theater including the Octet for Winds by Igor Stravinsky and Energia by Mexico's Carlos Chavez.

One Colorado in Old Pas

On Colorado Boulevard between Fair Oaks and Delacey Art Over Your Head

The Pasadena Conservatory of Music will perform outdoors and three site-specific outdoor installations will be on exhibit, created by artists Hadiya Finley, Gina Kuraner, and students from the Armory's Intermix Media Arts Program. Installations include floating legs and ironing boards suspended between buildings, and abstract paintings on bedsheets hung on walls.

Pacific Asia Museum
46 N. Los Robles Ave.

The Arts of Korea from the Pacific Asia Museum Collection

The museum's many galleries feature the arts of Asia and the Pacific Islands, and the current ex-

hibition of Korean art that commemorates the centennial of Korean Immigration to the United States. Tours of the Chinese-style courtyard garden will be provided by Museum docents, or visitors can discover the plants and symbols with a self-guided tour with the new Garden Guide.

Pasadena City College
1570 E. Colorado Blvd.

The newest cultural venue to join Art Night, PCC will host several events including the opening of the Siggraph Show, a digital and multimedia exhibition of the renowned international association of computer graphic artists. The recent acquisition of Deborah Butterfield's large bronze sculpture is now in the George Boone Sculpture Garden, and illuminated windows elsewhere on campus will feature projections of moving and static images. Also, live musical performances by college faculty and students representing traditional and regional styles will take place at various locations.

Pasadena Museum of California Art

490 E. Union St.

California Art Club: 93rd Annual Gold Medal Juried Exhibition

The PMCA hosts the 93rd Annual Gold Medal Juried Exhibition of the California Art Club, featuring more than 160 works of contemporary plein air and traditional paintings and sculptures from one of the world's preeminent professional artists' organizations. From rich landscapes to beautiful portraits to evocative sculptures, this exhibition is regarded as one of the most prestigious assemblies of current, traditional art in the country.

Pasadena Museum of History
470 W. Walnut St.

Next Stop - Pasadena - From Red to Gold

This exhibition surveys a century of Pasadena's rail history. This joint exhibit with the Los Angeles Railroad Heritage Foundation features large-scale and miniature models, nostalgic photos, historic artifacts, and memorabilia.

Family Treasures: The Fenyesh-Curtin-Paloheimo Legacy

An intimate glimpse into the lives of three generations of the extraordinary family that once called the Fenyesh Mansion "home." Highlights include exquisite artwork, vintage gowns and accessories, travel journals, correspondence, and other personal artifacts.

Also, live jazz by the acclaimed J. Vega Trio.

Pasadena Symphony
Pasadena Civic Auditorium
300 E. Green St.

Open Rehearsal for All Beethoven

The orchestra will hold an open rehearsal from 7:30 to 10 p.m. for its Opening Night *All Beethoven* concert featuring the Leonore Overture No. 3, Grosse Fugue, op. 133 and Violin Concerto in D major, op. 61. Featured violinist will be Ilya Kaler - the only violinist ever to win Gold Medals at the Tchaikovsky, Sibelius and Paganini competitions. As the American Record Guide claims, "You will never hear the violin played more perfectly."

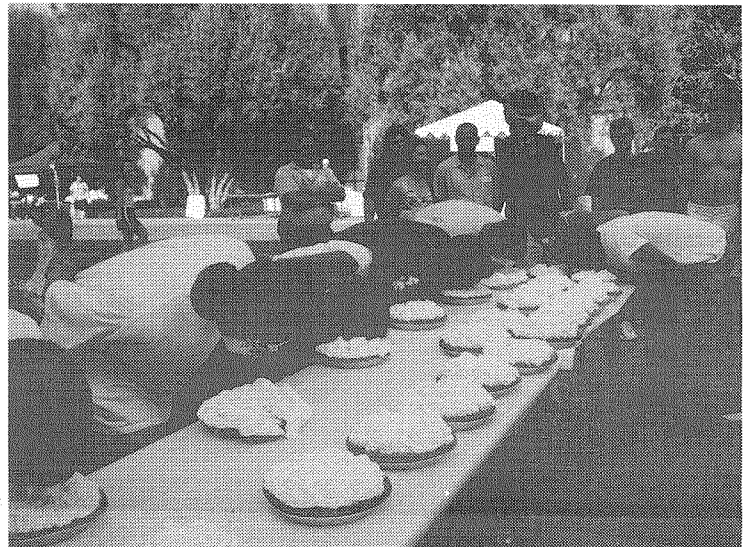
For more information on Art Night Pasadena call (626) 744-7249.

Snapshots from a Caltech Carnival



A. Choi/The California Tech

Caltech's Tang Soo Do Club showed up in full force to entertain and perform with their karate exhibition.



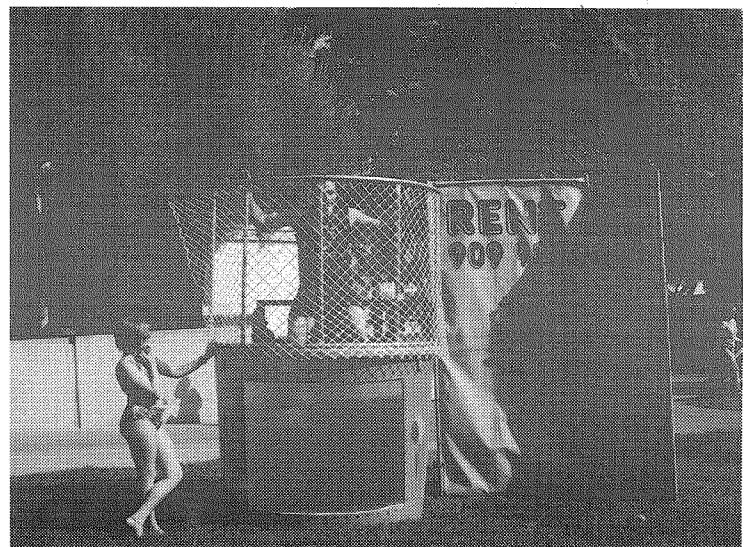
A. Choi/The California Tech

Students get messy with a delicious pie-eating contest.



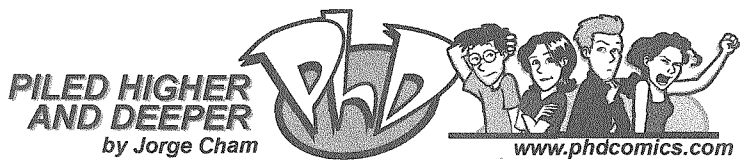
A. Choi/The California Tech

Caltech broke the world-record for the largest kazoo parade with over 700 kazoo participants.

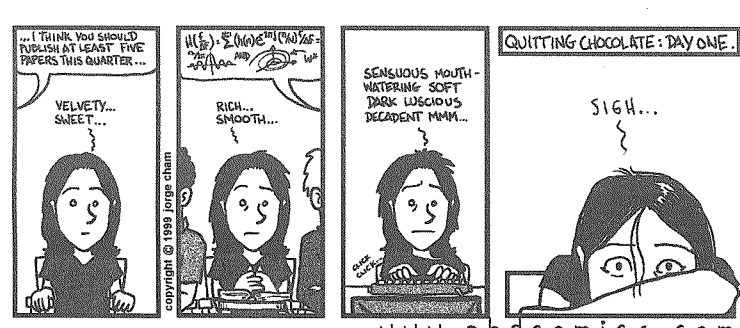


A. Choi/The California Tech

A carnival is never really a carnival without the old dunk tank. Here a brave student eagerly waits in the tank to get wet.



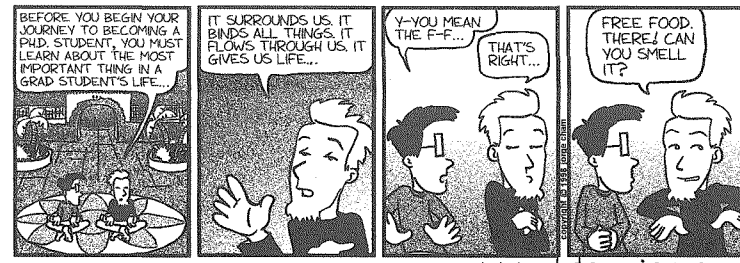
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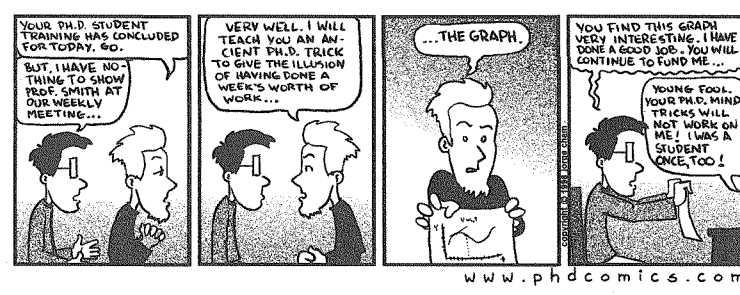
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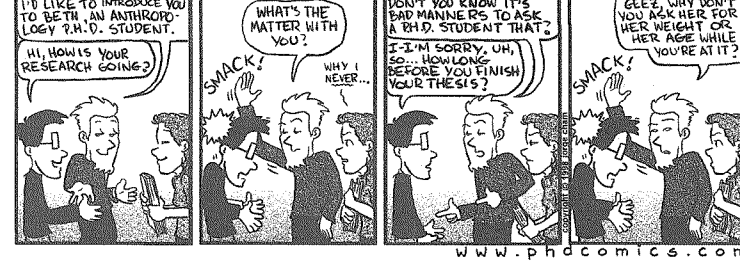
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Aero Association of Caltech (Caltech Flying Club). Want to learn to fly? AACIT offers aircraft rental and flight instruction, and organizes fly-outs and flying related activities. For more information visit our web page www.its.caltech.edu/~aacit or contact Eric Fechter at fechter@its.caltech.edu.

The Seminar on Science, Ethics, and Public Policy (SEPP) has been renamed: Caltech Humanities presents **Seminar on History and Philosophy of Science (HPS)**. 7 October 2003 (8:00 pm Beckman Institute Auditorium); Brenda Maddox, "Rosalind Franklin: The Dark Lady of DNA" co-sponsored by the Caltech Women's Center, President's Office, Caltech Public Events, Office of the Faculty, Biology Division, History and Philosophy of Science Program, Caltech Bookstore. Contact Caltech Ticket Office events@caltech.edu or 626-395-4652

20 October 2003 (4:00 pm 25 Baxter); Michael Arbib (USC), "From Monkey-like Action Recognition to Human Language: An Evolutionary Framework for Neurolinguistics" Please note the following Munro seminars as well:

17 October 2003 (4:00 pm 25 Baxter); Jonathan Israel (Institute for Advanced Study, Princeton), "The Radical Enlightenment"

7 November 2003 (4:00 pm 25 Baxter); Gideon Yaffe (USC), "The Government Beguiled Me, and I Did Eat: Responsibility and the Entrapment Defense"

Seminars on the Caltech campus are open to the community at no charge. For information, contact Moti Feingold at 626-395-8696 or feingold@hss.caltech.edu

The California Tech is looking for an undergrad to serve as our computer administrator. This person should be familiar with both Macintosh and PC systems, who would be able to keep our computers up to date, install software as needed and assist with the Tech website.

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.

The Caltech Women's Center is located at 265 Center for Student Services. Our mission is to promote the advancement of women in science and engineering. The Women's Center works to support the central research and educational mission of Caltech, while providing students, postdoctoral scholars, staff, and faculty--women and men-- with opportunities, programs, and services that address gender issues and promote success, equity, and safety. Some of our programs include Academic and Professional Development; JUMP, the JPL Undergraduate Mentoring Program; Women Mentoring Women; Technical Tours Series; and Seminars and Workshops. Coming up on September 30 is the Graduate Women's Discussion Group. October 7, we will host "Rosalind Franklin: The Dark Lady of DNA," Lecture and Book Signing with author Brenda Maddox. For a full list of programs and services, visit our webpage at www.womenscenter.caltech.edu.

On Wednesday, October 15, Dr. David Baltimore, President and professor of biology at Caltech, will give an Earnest C. Watson lecture, entitled "Viruses, Viruses Viruses." Beckman Auditorium, parking located at 332 South Michigan Avenue, Pasadena. 8 p.m. Admission: free. Call toll-free 1 (888) 2CALTECH (222-5832) or (626) 395-4652 for information.

Satirist and author **Al Franken** will read from his new book, *Lies and the Lying Liars Who Tell Them...A Fair and Balanced Look at the Right*, on Wednesday, October 22, at 8 p.m. in Beckman Auditorium. This even is part of Caltech's Voices of Vision series.

Franken trains his subversive wit directly on the contemporary political scene. Timely, provocative, and funny, *Lies* is becoming one of the most talked about book of political humor in 2003. Franken is the best-selling author of *Oh, the Things I Know!*, *Rush Limbaugh is a Big Fat Idiot and Other Observations*, *Why Not Me?*, and *I'm Not Good Enough, I'm Smart Enough and Doggone It, People Like Me!* A book signing will immediately follow the reading. Presented in collaboration with Vroman's Bookstore and Caltech's Words Matter series.

This event is open to the public, free of charge. Parking for Beckman Auditorium is located on Michigan Avenue south of Del Mar Boulevard in Pasadena. Call toll-free 1 (888) 2CALTECH (222-5832) or (626) 395-4652 for information.

Scholarships:

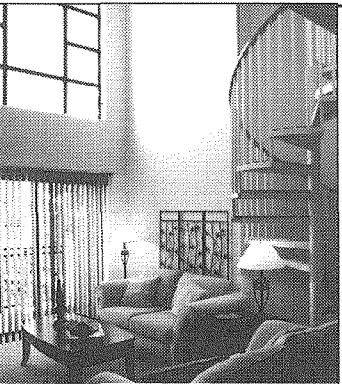
The Air Force Reserve Officer Training Corps (AFROTC) offers 3.5-, 3, 2.5-, and 2 year scholarships in all majors. The scholarships are generally capped at \$15,000/year towards tuition and fees, with an annual book allowance of \$480 and \$200/month stipend during the school year. Full-time student status, AFROTC program involvement, and a minimum of 2.5 cumulative GPA is required to be eligible. For more information visit www.usc.edu/afrotc/.

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, \$1000 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; a U.S. citizen; be able to attend the Measurement Science Conference on January 16, 2003 in Anaheim; submit an application before November 28, 2003. Applications are available in the Financial Aid Office.

The John Gyles Education Awards of \$3000 are available to full Canadian or American citizens who are studying all a r e a s o f postsecondary study. A minimum GPA of 2.7 is required. Criteria other than strictly academic ability and financial need are considered in the selective process. Filing dates for mailing applications in 2003 are **April 1, June 1 and November 15, 2003**.

For more information on scholarships go to <http://www.finaid.caltech.edu/news.html>

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New Electron Microscopy Suite, MRI Installed in Broad Basement

Continued from Page 1, Column 5

injector helps remove NO from the emissions.

Another major project completed over the summer was the renovation of a laboratory in the eastern basement of the Church chemistry building for the research group of Dr. David Macmillan. The group, which consists of about 30 grad students, moved here with Dr. Macmillan in 2001 from the University of California. The research group primarily studies organic synthesis and develops applications for producing pharmaceuticals. The

space had to undergo significant renovations that cost about \$633,000.

In order to accommodate additional hoods in the space, an external exhaust chase stack for the hoods was installed on the side of the building. The stack was oversized in anticipation of future renovations. Among the hoods it supports are two 11 foot hoods that can house up to four work stations. Another two new air handler units were needed to ensure adequate ventilation. Two mini-hoods will be installed in a room that was renovated to be especially for distilling solvents. Another lab sports a special bench designed for Neslab coolers, with another air handler to ensure heat removal from the room.

Other changes included enlarging and moving the conference center. The computer was also relocated and made smaller. A lot of aesthetic changes were made, according to project supervisor Anneline Weil, including painting the floor and ceiling and retiling the floor. New cylinder cabinets, which house the gas canisters holding oxygen, argon, nitrogen and other gasses, were installed, along with exterior gauges and "earthquake-proof" regulators.

The bulk of the costs came from upgrading the infrastructure to meet building codes and accept the new equipment. A lot of the equipment, however, was custom made at Caltech by the glass-blowing shop and the carpenter shop, including much of the glassware and a custom designed conference table that sports power and Ethernet jacks at every seat, along with the ability to control the room's lights and audio-visual equipment.

The project has been in progress

for about a year. Infrastructure upgrades took about four months and waiting for arrival of equipment took up another six months.

A third project, that was only finished last week, was the installation of some equipment at the Broad Center on Wilson. Though the installations were planned before construction of the Center, the specifics on the equipment were not known, so the building was built to accept the equipment and ready for renovations specific to any equipment.

Earlier this summer an electron microscopy suite that included two microscopes was installed in the basement. The suite consisted of a Philips T12 that is used for biological and cryo-electron microscopy. The second is a Philips F30 microscope, which is designed for ultra-high atomic resolution.

Also earlier this summer a full body MRI magnet was installed. Since the building was built accept it, the ground above it had to be dug up and two hatches had to be removed. The first hatch prevents water from leaking into the room and the second is a steel hatch that protects the chamber. The room also has to be prepared to make sure it meets the criteria for optimal operating conditions, including sound, vibration and cooling requirements. A second magnet was installed last week and a third is expected within the next two months, according to Bill Nunez, the project head.

Caltech is also planning some more major upgrades, including the construction of a parking structure and water storage unit under the north field, as well as another chemistry lab upgrade, so look forward to more construction.

Researchers Clean Water, Win Conservation Medal

By KATHERINE POULIN

With the presentation of the prestigious Jack Edward McKee Medal to Hui-Ming Hung, Joon-Wun Kang and Michael R. Hoffmann, the Water Environment Federation (WEF) is recognizing the environmental importance of the three scientists' work.

The McKee Medal, named for the past WEF president and Caltech professor, was created to honor achievement in groundwater protection, restoration and sustainable use. The medal is awarded for significant contributions to the field of groundwater science or engineering, published in any WEF journal.

The three scientists are being honored for their article, "The Sonolytic Destruction of Methyl tert-butyl Ether Present in Contaminated Groundwater," which was published in the December 2002 issue of Water Environment Research.

Hoffmann is the James Irvine Professor of Environmental Science and the dean of graduate studies at Caltech. Hung received her PhD under Hoffmann's tutelage and is currently a postdoctoral researcher at Harvard University. Kang spent a year as a visiting associate in Hoffmann's laboratory and is currently a professor in the department of industrial environment and health, Yonsei University, Korea.

Since 1990, methyl tert-butyl ether (MTBE) has been added to gasoline to meet the oxygenate requirements established by Congress in the Clean Air Act Amendments. Oxygenates are a family of chemicals that increase the oxygen content of gasoline, thereby allowing cleaner and more complete consumption of the fuel. MTBE, because it is less expensive and easier to transport than other oxygenates,

has been extensively used by refiners and is found in close to 90 percent of treated gasoline. MTBE-treated gasoline has helped to improve air quality, reducing smog-forming pollutants by at least 105,000 tons and toxins by at least 24,000 tons annually.

However, the benefits of MTBE come at a price. Leaks from storage containers and spills during transportation have led to a growing problem of MTBE contaminating groundwater, including drinking-water sources. The potential health risks of MTBE have not yet been determined, but the offensive odor and taste of the chemical can make water undrinkable. Because MTBE is not as biodegradable as other gasoline components, it has become a persistent problem that traditional methods of decontamination have proved unsuccessful in treating.

In their paper, Hung, Kang and Hoffmann applied the established technique of ultrasonic irradiation to the removal of MTBE from a crude sample of contaminated groundwater. They first analyzed the mechanism of ultrasonic degradation in pure water spiked with MTBE and then compared the degradation in the spiked sample to that in water collected beneath JFK International Airport, New York. They demonstrated that the destruction of the MTBE in the crude sample occurred efficiently, thus establishing the usefulness of ultrasonic irradiation for decontamination. Their thorough characterization of this technique has laid the groundwork for the development of a practical system for the efficacious removal of MTBE from contaminated groundwater.

The California Tech

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Movie, Fireworks Greet Returning Students at Mannion-led Carnival

By IRAM PARVEEN BILAL

The Caltech community was welcomed back to campus this fall with a huge bash. "The 2003 Orientation Carnival" of September 27 was perhaps the largest carnival arranged for students in recent history. The day began with a club fair and classic carnival activities including a water slide and sumo wrestling. The festivities lasted well into the night, culminating in an impressive fireworks show and a screening of Charlie's Angels II: Full Throttle.

Tom Mannion, newly appointed Senior Director of Campus Life, revealed that corporate sponsors, such as Nestle and Coke, provided a large portion of the funding. Other Caltech organizations pitched in, like the Graduate Student Council, which helped arrange for the movie. Glossing over some figures, Mannion revealed that the major expenses were the event were 1400 corn cobs, \$1500 for the fireworks show and \$2000 for lunch food. Nestle provided 1500 ice cream bars at a bargain price of \$200. Total expenditures for the carnival are estimated between \$10,000 and \$15,000.

Most of the expenses were covered by the sponsors, a fact lending itself to the question: why hasn't there been an event like this before? Director Mannion commented, say-

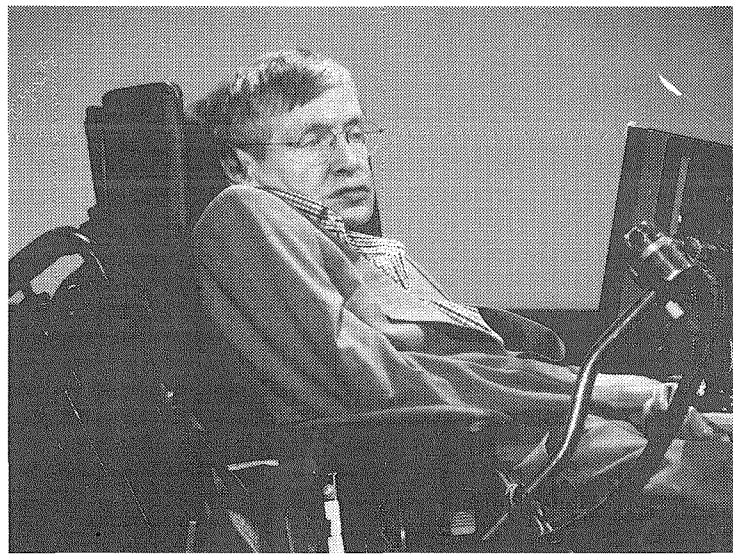
ing, "Organizationally we are different this year and I see a lot of extra energy. In fact, we are already planning next year's event and are also pinning down vendors for bigger and better stuff." He added that the carnival is likely to become an annual staple in the Caltech welcoming schedule. Plans for the future include incorporating the graduate student fair and having a pop concert performed by a notable group.

Planning for the carnival began last spring at a meeting of the Student Affairs Orientation committee. The committee decided that four requirements of any carnival would be the club fair, games, a movie and fireworks. Student Affairs newcomer Fred Romberg was placed in charge of the event and with the help of students, succeeded in organizing a fantastic event.

Mannion described preparations for the barbecue that accompanied the carnival saying, "We cooked over a thousand pounds of meat for dinner. It was all spiced by me and some students and most of it was smoked in my backyard." The Campus Life Director, who has always taken an interest in helping organize huge meals for Ditch Day and the like, commented on the need for social extravaganzas at Tech: "Relaxation, fun and unity seem like things we need here." He

added that having organized larger carnivals at other schools, he had confidence that the event would be a success. His premonitions were realized in the huge crowds of students that traversed the Court of Man throughout the day. Reflected Natalie Kruk, Class of 2006, "It was very refreshing to have something like this at the beginning of the year, though the food was definitely more popular than the movie!"

It is a pleasure to see funds on campus being devoted to the highly dormant social life of Caltech students. One might wonder, however, if setting this precedent might force such similar commitments from Campus Life and other Student Affairs offices for various events in the future. One that comes to my mind is a fireworks display after Senior Dinner!



D. Korta/The California Tech

Stephen Hawking, a Cambridge faculty member, took a moment to entertain questions from the audience, over a wide range of topics.

Hawking Steps Back From Claim, Maintains Humor

Continued from Page 1, Column 5

mathematics, Hawking suspected that no small number of physical laws could command every physical problem. "According to the positivist philosophy of science, a physical theory, is a mathematical model. So if there are mathematical results that can not be proved, there are physical problems that can not be predicted."

If that were the case, then there would be no such "final theory," and physicists would be stuck working indefinitely. Professor Sterl Phinney, an astrophysicist at Caltech, echoed Hawking's sentiments about the likelihood of holding out for a final theory, instead

seeing "physics as progressing through successive approximations."

He also noted, as did Professor John Preskill, that Hawking had changed his opinion on viability of a final theory since his Lucasian Chair inaugural lecture in 1980, where he claimed that "the end of theoretical physics is insight." For a while he stuck to the view that a final unified theory would be found in the next two decades, but at some point reversed himself because of the peculiarities of M Theory.

Hawking seemed to make a conscious attempt to instill humor into his entire talk, by making allusions to loan sharks and taking silly questions from the audience after the lecture. Junior Ben Aronin ambled up to the podium to ask if Hawking thought he could beat President Baltimore in a death match, looking for confirmation of one taped earlier for a house video. Another inquirer was disappointed to hear that Hawking's voice synthesizer was unavailable on the internet.

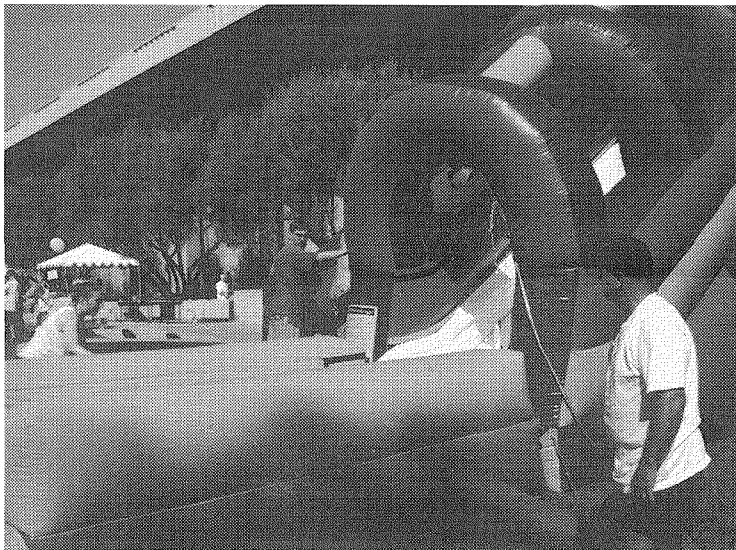
Two serious audience members asked about experimental confirmation of M Theory and the idea that perhaps new worlds were created inside black holes, similar to the Big Bang. Hawking responded that M Theory had indeed made concrete predictions, such as supersymmetry, and was verified by the Cosmic Microwave Background.

The highly anticipated event left only a small amount of student tickets reserved, and so several undergraduates found themselves camping out on the Beckman lawn on Thursday night in order to gain admission. Vincent Auyeung '05, and several friends pitched a tent early Friday morning, and ended up around 34th in line for standby tickets--good enough to get in. Others weren't so lucky, and had to watch the lecture in a nearby overflow auditorium.

Though annoying, Auyeung said the wait was worth it to see "one of the greatest physicists of our time," and would look forward to the next time Hawking swooped down on our campus.

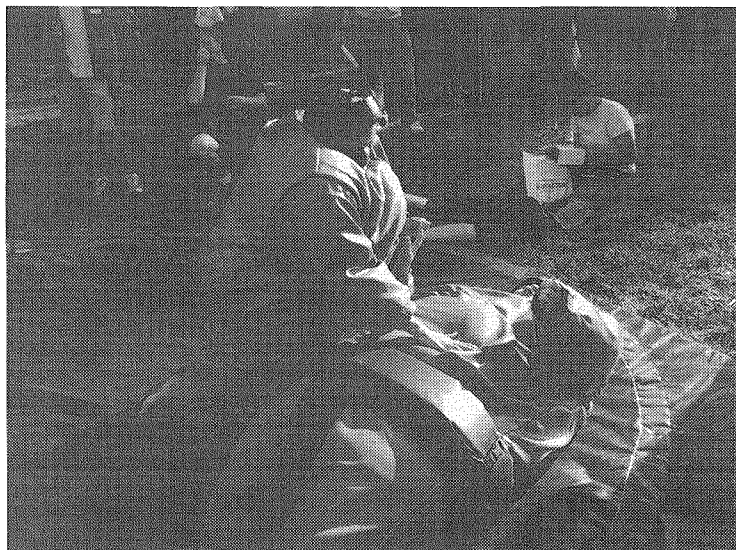
Question of the Week

What should Campus Life add to next year's carnival?



A. Choi/The California Tech

Many students took advantage of the enormous, inflatable water slide to get each other wet.



A. Choi/The California Tech

Trying out one of the sets of sumo wrestling suits, two Tech students relieve years of pent-up stress.

Investigations Continue on August Chemical Explosion

By TAMMY MA

Shortly before 7 a.m. on the morning of Monday, August 14, a fire broke out in a chemical storage shed near the central engineering machine shop.

The fire began spontaneously when a Caltech safety worker was disposing of a 4-liter bottle of an organic solvent with the chemicals in a 5-gallon container that was stored in the shed. These materials are routinely used on campus. The worker was unhurt.

Caltech security immediately called the Pasadena Fire Department. Seven units from Pasadena, Burbank and Glendale fire departments, including two Hazmat units, responded at 7:08 a.m. and had the fire quenched by 7:34 a.m., according to Pasadena Fire Dept. Battalion Chief Fred Law.

Rene Stone, a mechanic who works on campus, described the flames as intense, more than 20 feet high and couldn't be extinguished with water. Nearby employees were evacuated from the premises, he said.

Firefighters sprayed water on the shed and the outside of the building to keep them cool, the used chemical foam to put out the flames. No one was injured in the

blaze.

According to Larry Martinez, Caltech's Hazardous Waste Coordinator, "The storage unit that housed the operation was completely destroyed, in addition the EH&S cart was damaged in the incident. There was also superficial damage to the exterior wall of [the] Central Engineering [Services building]."

According to Martinez, the cleanup of the fire and the fire's damage took approximately 50 hours from the time of the incident and the cost to clean up the site after the fire came out to be approximately \$42,000. Martinez added, "While the exact cause of the fire is difficult to determine, it is speculated that an alkali metal that was present in a container of oil caused the accident."

Meanwhile, a committee composed of chemistry faculty has been appointed to develop testing protocols for solvent wastes prior to the consolidation process. In addition, the EH&S Office is in a design phase for the new storage unit. Part of that phase is to build more redundancy into the detection and suppression systems associated with those types of facilities.

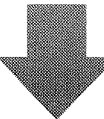
CALTECH CONVENTIONAL WISDOM WATCH



Hawking Denies End of Physics: Not just idle words from another armchair philosopher.



California Governor Election: Arnold converts Hummers to Hydrogen. Stops short of total recall.



Stunts Gone Bad: Siegfried and Roy catastrophe. Trademark white tigers now bright red polka-dot.

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