To the readers of the California Tech,

This is the last issue I will be doing as Editor of The California Tech. During my time in office many issues have come before the student body which have been brought to your attention by the Tech which I would like to believe I had at least a little part in.

The current issues that need to be addressed as always are the relationship between the administration and the students. Mainly the disturbing trend toward more control. The issues of DAPAC and the ASCIT van still loom large over the heads of the student body. Fireballs and other formally common events are rare memories of the past.

Caltech is changing to a more repressed enviorment which is no longer conducive to the freedom that the students had formally enjoyed. The struggle between students and Administration seems to be a losing one for the students, in a trend led by the DRL, Gary Lorden and President Everhart. Prehaps that day is passed but I do not feel that it needs to be. Why is it that things that have been allowed for generations of Techers are suddenly removed?

I truely enjoyed my two terms as Editor of the California Tech and hope that at least in a little bit you (the student body as well as the faculty) enjoyed the Techs our team has produced.

Shay Chinn

Just how important **are** grades? Frosh will find out soon enough.

see next term...

THE CALIFORNIA TECH

VOLUME XCVIII, NUMBER 20 | PASADENA, CALIFORNIA | FRIDAY, MARCH 7, 1997

Dukakis encourages political awareness on campus

On March 4th, Michael Dukakis, former Governor of Massachusetts and presidential candidate in 1988, spoke to an attentive audience in the Beckman Institute Auditorium. He came to talk about politics and public policy, and to address his concerns about American domestic problems. It is worrisome that the United States has the greatest income gap of any industrialized country, that so many go without health insurance, and that social security does not provide the assurance it once did. Dukakis attempted to deal with these issues and field questions from the audience.

Dukakis talked at great length about the problem of social security. By any estimates, the money for social security, if collected at the present rate, will run out long before those of us who are students now will ever see a penny of it. Currently, the social security tax takes six cents off every dollar earned below $65,000. According to Dukakis, a much fairer system would be to apply a lower rate to the entire income of every citizen, thus taxing the wealthy at the same rate as the middle class. As 85% of Americans earn below $65,000 per year, this would seem to be an easy bill to pass in Congress, except for the fact that 100% of Congress earns more than that amount. An alternative route would be to apply the same rate to all, thus opening up much greater funds for the future.

Another significant problem is the difference between the cost of living and the amount people actually make. The typical person on welfare, a single mother, would have to earn $7.80 an hour to support herself and one child, and yet the minimum wage is much lower than this amount. The average middle class wage earner has to scrape his pockets for the money to send a child to college. Dukakis mentioned that the cost of room, board, and tuition at his college in the 50s was a mere $1200 per year. Even accounting for inflation since then, this is far less than the twenty-something thousand dollars per year required to attend an Ivy League institution. Somehow the gap between the rich and poor should be reduced.

The health care issue that has been so important to the current administration also deserves much attention. Universal health care has been suggested not just by Clinton, but by Theodore Roosevelt, Truman, and Nixon. Most employers already pay for their employees health care, so it is in their best interests to make all employers pay, instead of helping to cover the cost of emergency care for those who are uninsured.

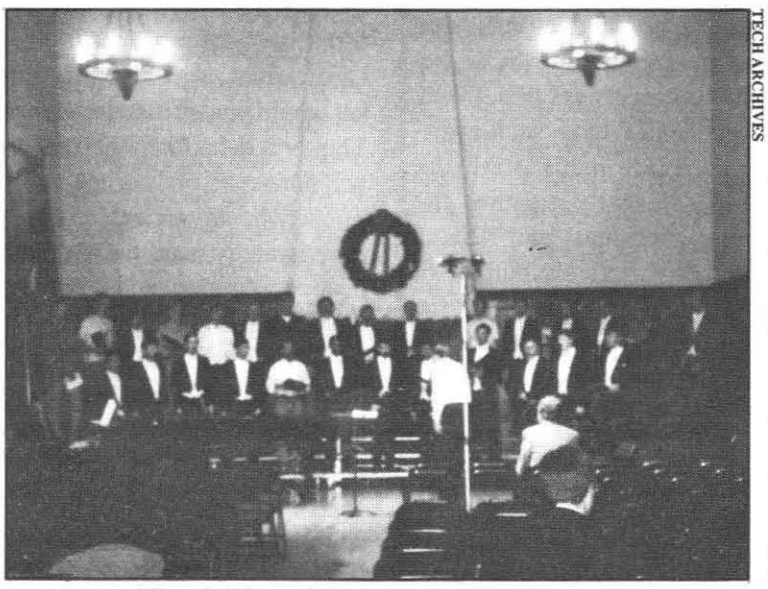
It is a true case of "ideology over reason", stated Dukakis.

At the end of the talk Dukakis strongly encouraged everyone to get more involved and aware of politics. Only 38.5% of registered voters actually bothered to vote in 1994. This is a serious problem in our democracy which he urged us to help address.

Oedipian tale sung by Glee Club

BY ERIK STREED

This Friday and Saturday (March 7 and 8), the Caltech Men's Glee Club will be performing a program of folksongs from China, Crete, Japan, Newfoundland, Scotland, and Sweden, followed by Igor Stravinsky's Opera-Oratorio *Oedipus Rex*. Director Don Caldwell was fortunate enough to secure the services of Caltech Alumnus Thomas Oberjat (Tenor, '63) and New York Metropolitan Opera Artist Dean Elzinga (Bass Baritone '89) for solo roles. In addition, Mezzo Soprano Debbie Cree Smith, who has previously sung with the Men's Glee Club, adds her voice to this production of *Oedipus Rex*.



TECH ARCHIVES

Mens' Glee club prepares for concert.

Stravinsky's *Oedipus Rex* is an adaptation of the ancient tale by Sophocles. The Opera-Oratorio preserves only the most monumental aspects of the story, conveying their meaning and emotion in song and verse. While sung entirely in Latin, the story is narrated in English for clarity. Even though it is sung in Latin, many of the key words and phrases are understandable. For example the line "Oedipus, e peste libera urbem" translates roughly to "Oedipus, liberate our city from the pestilence." Unlike other music performances you may have attended, *Oedipus Rex* is a staged production, using elements from theater such as lighting, costumes, and props to enhance the presentation.

Oedipus is a plaything of the cruel and heartless gods who live in the land beyond death. He does not know it, but the gods have laid a trap for him, a trap which was set at his birth and encompassed his life. The tale begins in the plague-besieged city of Thebes. The people of the city cry to King Oedipus to save them from this plague. Oedipus sends Creon, his brother-in-law, to the Oracle at Delphi to discover the cure for the plague. Creon returns from Delphi and announces that the murder of Polybus, the previous king of Thebes, whose wife (Jocasta) Oedipus has married, must be avenged. According to the infallible oracle, the murderer is hiding in Thebes and must be driven out. Oedipus boasts of his ability to deal with the forces of darkness. He, after all, was the one who defeated the dreaded man eating sphinx. However, what Oedipus does not know is that the old man he killed before encountering the sphinx was Polybus. Come see the opera to hear the rest of the story, including a truly gruesome ending.

The nitty gritty — Who: Men's Glee Club with soloists Dean Elzinga (Caltech '89), Thomas Oberjat (Caltech '63), and Debbie Cree Smith. What: Folksongs and Igor Stravinsky's *Oedipus Rex*. Where: Ramo Auditorium, Caltech. When: 8 PM on March 7th and 8th. Why: Because you can still see the 10:00 ASCIT movie showing on Friday and it gets out in time to go to Blacker Jungle Interhovse on Saturday. How much: Admission is *free*. For more information call (818) 395-4652.

The Magnificent Seven

Howdy, all. In case you didn't hear about it beforehand, ASCIT sponsored a Supplementary Undergraduate Doughnut Distribution Session (SUDDS) at 1:00 am on the night of the 6-7 March (last night), in addition to the regular Friday Morning ASCIT Doughnuts.

On the suggestion of your faithful treasurer and mine, John Lin, we at the ASCIT Board of Directors (BoD) decided that this was a great way to reach out to a broader population of ASCIT members with this late-night treat. I hope you got a doughnut.

We in the BoD have an ongoing quest to broaden the reach of ASCIT (Get it? Carrying lots of boxes of doughnuts, thereby lengthening our arms... Alright, it was a stretch.) so that people like Mr. Hatfield aren't left out of the loop. To that end, shortly you will be receiving a survey on the distribution of ASCIT's budget.

Why the budget? Doesn't ASCIT do more than just dole out money? Well, yes, of course we do. But much of what we do requires money — geez, even the survey will cost money to send out — and if you've ever dealt with a bureacracy you know that the real power is invested in he who holds the purse strings.

For example, on the newsgroup caltech.ascit, Mr. Murase has spawned a discussion on the efficacy of the ASCIT Movies. I think the discussion therein is really worth a look. And please post your opinion, too. We can never have too wide a spectrum of input.

But that's just an example. Take a gander at the 96-97 ASCIT budget, now, or when we mail one out to you. I'll try to itemize it a bit more than it is now — like listing explicitly the ASCIT Formal — so that you may be as informed as possible.

Now I'd like to refer to an article I submitted (for your approval) two weeks ago. In that

SEE KOHL ON PAGE 9

IN THIS ISSUE

THE USUAL STUFF

THIS WEEK'S FEATURES

LETTERS TO THE EDITOR

Not what ASCIT can do for you, but what you can do for ASCIT

Editors, Undergrads and Dave!

Why should we have a student government? Because, as a group and as individuals, you have the opportunity to have a significant impact on life at Caltech. You can be the voice of the students and choose to put forth ideas and suggestions that move us along a continuum of improvement. What's the point? The point is that Caltech cannot function without faculty, staff *and* students. You must take these opportunities for input and involvement and make them reality. Some decisions have to be made, even if you choose not to be involved. Some ideas won't ever be discussed unless you raise them. Some concerns won't ever be obvious to others unless you share them. What can *you* do? Anything and everything! Your voice is more significant than you may realize and the opportunity to access faculty and staff at Caltech greater than at many (most?) other schools.

Those are nice words but now you're saying "what can I do?" I can't speak for my colleagues but I can tell you about some opportunities I am aware of and/or involved in that provide opportunities for you to share your opinions, influence decisions, create programs, and access staff and faculty.

Volunteer to be on the the Residence Life Advisory Group and participate in decision-making that affects our office and *you*! Be on the Undergraduate Housing Emergency Preparedness Group and help develop the plan that will be used by Housing and Residence Life when emergencies occur! (i.e. a major earthquake) Contact a member of the Student Affairs Advisory Group and funnel your ideas through them! Volunteer to assist with Leadership Training programs being developed for spring term! Help plan the second year of Caltech 1a! so that it better meets the needs of upperclass students as well as new ones. In response to suggestions from current UCC's, help develop the UCC training programs for fall '97! Provide input to the Alcohol Policy Review Committee via any committee member.

Take advantage of the opportunity to interact with your House Associate (faculty and/or staff members affiliated with all seven houses)! Take the issue you are most concerned about and contact the person who can potentially address that with/for you! Take advantage of the fact that your RA lives down the hall, is a great resource, and has a "direct line" to Residence Life! I am very biased and think they are some of the most wonderful people I interact with at Caltech.

The opportunities are there! Grab them! We are all here for you. We would like to think that we are accessible, available and responsive wherever possible. In a perfect world, it is always more enjoyable to work with others on decisions and improvements that impact undergraduate life. In his article last week, Eric Bogs referred to Residence Life as thinking you were "incapable of making intelligent decisions" for yourselves. Our willingness to support the Institutes Drug and Alcohol policy and our concern for your personal safety does not mean we don't trust you. In fact we frequently rely on your input and seasoned decision making skills. What it means is that I am unable and unwilling to take on the personal liability involved, desire never to be face-to-face with the city fire marshal again, and can't imagine how I would explain to those who love you that I was negligent in trying to protect you in any way. Barring issues of safety and legality that may have little flexibility, our ability to mutually influence day-to-day life here is almost unlimited and should always be a relationship of mutual trust and respect.

Good luck with finals and have a wonderful break!

KIM D. WEST
DIRECTOR OF RESIDENCE LIFE

Dear Editors:

I was quite shocked at Dave Relyea's outrageous response to John Hatfield's article, "ASCIT elects apathy." (*The California Tech*, February 21, 1997) Not only was it a personal attack, it also failed to address the major issues presented by the article.

The article *never* states that ASCIT is useless - only that it has a disjoint relationship with the houses and the student body. Yet what does Relyea do? He gives a list of the functions that the ASCIT does, and states, "If you think Caltech would be a better place without any of thise things, then I'm going to offer my humble opinion that you're f***ing wrong." What Relyea does *not* do is to offer a solution to the problem: how should the ASCIT deal with the apathy of the student body? What should the ASCIT do to establish a better connection between the houses?

Let's face it – ASCIT may do many important things, but unless it makes a better effort in reaching out to the students, it will be taken for granted. This is the real danger ASCIT is in – and Relyea fails to see this.

To be fair, John Hatfield's article clearly showed a lack of depth and information. For example, John Hatfield should've interviewed house presidents and people within ASCIT before writing things like, "Why does ASCIT have such a disjoint relationship with the houses?" or "...it seems the house presidents and ASCIT interact very rarely outside of [rotation]." Nevertheless, the personal attacks made by Relyea, such as "You total flaming idiot. Please put some conscious thought into your question before they're asked, okay?", are totally unwarranted. In conclusion, Dave Relyea's juvenile response to John Hatfield only hurts ASCIT – it shows that ASCIT was headed by a person who is not willing to deal with a major problem that ASCIT faces.

DANIEL SONG
UNDERGRADUATE

Affirmative action: to discriminate or not to discriminate

BY CHERISH BROWN

On November 5 of last year, about a fourth of California's population voted on Proposition 209, the "anti-affirmative action" bill. While it is troubling that it took the votes of only 13.7% of the population to pass the proposition, the image given affirmative action by its opponents was far more disturbing .

Proposition 209 was put on the ballot by black businessman Ward Connerly (see Feb. 3, 1997 *Time* article), and Republicans, Libertarians, and a few other groups jumped on the bandwagon. The left-wing political spectrum was quick to say that they'd gladly give up affirmative action for a better alternative.

> *Ultimately, a change in perceptions of the abilities of minorities and women is the only thing that will change discriminatory behavior.*

Unfortunately, the only "alternative" offered, mostly by Libertarians, was that the market would punish discriminators. This is a delusion: the market will not get rid of discrimination. Those who advance this lassiez faire strategy need only look at history to understand. Prior to the passage of the Equal Opportunity Employment Act, the status and roles of women and minorities had remained virtually unchanged from the post-Civil War era.

If anything, affirmative action policies haven't done enough. Today's economic system is controlled almost exclusively by white males. A recent survey done of the 7,314 most powerful positions in the U.S. (in both the government and private sector) by Tom Dye of Florida State University showed that women occupied 318 of these positions. Blacks compromised only .25%.

In 1992, the Anti-Defamation League surveyed Caucasians on eight common but untrue stereotypes about African-Americans (laziness, low intelligence, welfare exploiters). Almost 8 of 10 Caucasians believed one or more of these stereotypes, while a third of those surveyed believed most of the stereotypes. A survey done in Los Angeles in 1994 showed that over 60% of African-Americans in general, and 90% of African-Americans with graduate degrees, faced workplace discrimination in the year before the survey.[1]

It's hard to see any "reverse discrimination" here. Yet conservatives say that affirmative

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ERRATA:

Last week's letter to the editor wrongly referred to Dave Relyea as ASCIT president, not ex-ASCIT president Kohl Gill has been the ASCIT president since Febraury 10th of this year.

CIRCLE OF FIRE

"ONE FLAME A WEEK - MY PROMISE TO YOU."

BY AUSTIN COLLINS

This week, I intended to begin the much delayed series on liability in society. However, Tuesday's fire alarm drill motivated me to begin with **Safety Offices.**

My problem with Safety Offices is largely the same problem I have with Human Resources Departments. This problem is that, when stripped of the jargon that each has generated when a political mollification of some sort required its formation, these departments are largely superfluous. Without the jargon that each develops, people would quickly realize that these departments are a waste of resources.

Human Resources Departments are in place to provide an alternative to acting like adults and resolving disputes maturely. Safety Offices serve a lesser evil by simply providing an alternative to acting intelligently. In fact, as one of the supervisors officially in charge of lab safety at my job put it, "The point of safety is to be redundant."

No rational individual who has ever run the gauntlet of safety requirements that are necessary to work in a modern laboratory environment believes that these courses prevent accidents. For example, employees of LIGO who work in laboratories where lasers are present were recently required to take a laser safety training course.

This course consisted of a lecture and video, watched by people who make lasers themselves, assembled by a man who barely knows what a laser is. This is not to demean him in any fashion — his familiarity with federal guidelines and experience in this field make him very well qualified. It is simply that seeing some of the premier experimentalists on campus in a room watching a video with educational gems like, "Be sure and check the beam path for reflections before putting your eyes at beam level," is truly farcical.

1. If they didn't know that lasers could blind you, why are they working in a laser lab in the first place?
2. If they are absent minded enough to neglect to preserve their own eyesight on occasion, is this half hour of high school level material going to correct the situation?
3. If they didn't know to always check a path before putting their *face* in front of a laser beam, what in tarnation are they doing at Caltech?

If they didn't know that lasers could blind you, why are they working in a laser lab in the first place?

"The point of safety is to be redundant," I was told. This I can accept. If they'd said, "Well, Austin, the NSF is coming through and in order to mollify them and get our grant money we have to do this," I'd be okay with that. Even if they said, "This is necessary to protect us from silly lawsuits," this would suffice.

However, this is not what they did. Instead, things like "Laser safety is an important issue that is going to take a more prominent role in lab maintenance," were the going lines.

This fire drill that was conducted Tuesday night is precisely the same thing. In this drill, the Caltech Safety Office managed to conclusively prove that if you e-mail everyone in advance, go through the Houses knocking on doors after the alarms go off, and have donuts waiting for the students on the lawn, some of the undergrads will come out of their rooms when the fire alarms go off.

Call me cynical, but this isn't an achievement of any merit whatsoever. Yet this is what safety offices do. This is the type of drill they point to when they claim that the campus is safe.

So how do you improve safety? There is no easy answer to this. Hmm, actually that's not true — there exists a trivial solution, but one that will surely never be implemented. This solution is to make stupidity a legal defense.

Lawyer: "Yes, your honor, although this lab did fail to show any laser safety videos, this man stuck his face in front of a five watt laser beam."
Judge: "Was he aware of the danger the laser beam posed to his eyesight?"
Lawyer: "Considering that he built the laser, we suggest he did, your honor."
Judge, clanging gavel: "I find this sufficient stupidity to exclude your institution from damages."

Case closed.

I should take a moment to distinguish the safety practices I am discouraging from the necessary ones. Safety officers do perform useful tasks. Making sure that laboratories are safe for visitors, guests, and people not familiar with the specifics of the laboratory is important. As is developing procedures in case of an emergency, and requiring that Material Safety Data Sheets be on hand in the case of dangerous chemicals. There is a difference between safety officers, and safety offices. Safety officers look out for people who might not know better. Safety offices look out for the bureaucracies and the lawyers who do.

It really is that simple.

"Cyrano: So, this is your revenge?

Compte de Guiche: Take it to mean I serve my King, and vent my spleen."

—Rostand

The Outside World

by Myfanwy Callahan

BONN, GERMANY–
Defense Secretary William S. Cohen told American allies in Europe that the United States will pull its peacekeeping troops out of Bosnia in 1998, whether the country has regained stability or not. He left open the possibility of a combined Euopean force taking our place in Bosnia.

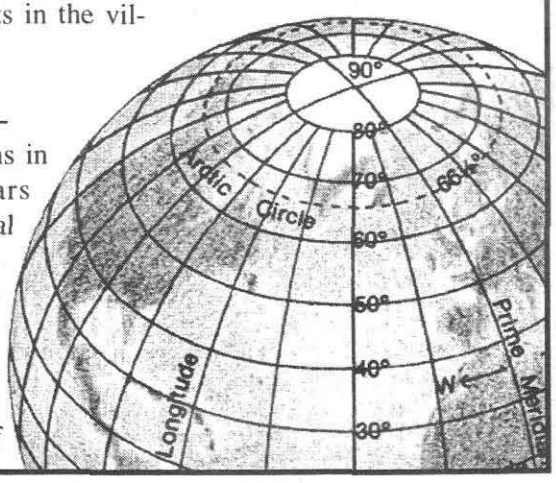
DANNENBERG, GERMANY–
Hundreds of anti-nuclear protesters threw stones and firebombs at riot police while attempting to block a shipment of nuclear waste. The police arrested 250 protesters.

KITGUM, UGANDA–
Christian fundamentalist rebels in Uganda are waging terror on villages of the north. Members of the Lord's Resistance Army, searching for deserters, killed 8 women and a girl with bayonets in the village of Palaber.

LA PAZ, BOLIVIA–
The heaviest rains in almost 30 years flooded the tropical lowlands of Bolivia, killing at least 16 and destroying the crops of 100,000 farmers. Cases of malaria and yellow fever have already begun to rise due to the water-logged terrain.

VLORE, ALBANIA–
The port city of Vlore is strongly considering becoming an independent city-state within Albania. Currently government troops and tanks wait outside the city for more support, while citizens of Vlore say they will use their tanks if the Government chooses to attack.

ARKADELPHIA, ARKANSAS–
Violent tornadoes that struck last Saturday killed 25 and injured hundreds of others in Arkansas. Rains associated with the storm have swelled the Ohio River to its highest crest in 30 years, causing hundreds of millions of dollars worth of damage in Kentucky and Ohio as well.



AFF. ACTION: Keep it around

CONTINUED FROM PAGE 2

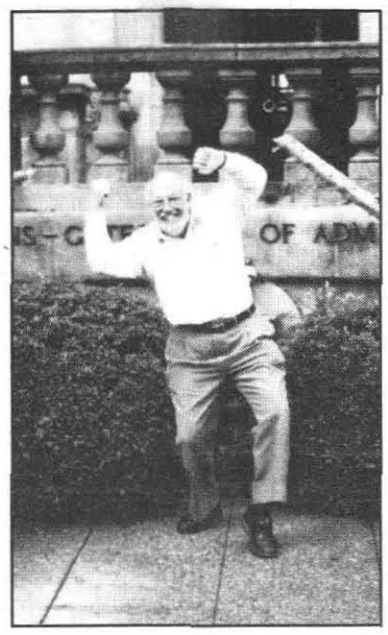
action is quotas, and that jobs are going to less qualified applicants because they are minorities. These arguments have a glaring fallacy. People's experiences guide their perceptions of the world. Were it not for affirmative action, even fewer minorities would have had the opportunity to break into new fields to prove that they are competent, intelligent and motivated.

Maybe affirmative action hasn't been as effective as hoped, but it can help destroy misconceptions as people see fully qualified minorities and women working, producing, and earning their way in society. Ultimately, a change in perceptions of the abilities of minorities and women is the only thing that will change discriminatory behavior: letting people see for themselves that there are no fundamental differences between people.

Those who are being "punished by the market" seem to believe their employment problems are caused by minorities rather than considering that they aren't qualified. However, for centuries our ancestors "stole jobs" away from qualified minorities and women. For once in history, we've actually made progress toward a level playing field. I'd hate to see us take two steps back from the one we've taken forward.

[1]*All statistics and studies cited in this paragraph are from a talk given by Joe Feagin, a professor of Sociology from the University of Florida, at a Public Education Network conference on racism and education.*

Dean's Corner



Hear Ye! Hear Ye! "Mary had a little . . . clone," announces Science *Magazine.*

Hominis in ova ovis: Men in sheep's eggs

by Jean-Paul Revel

Actually, "udderly amazing" Dolly was born 7 months ago in Scotland, a "cloned" sheep produced by inserting the nucleus of a cell from the udder into an enucleated egg, and implanting this artificial construct into the same sheep's womb where it developed. A whole flock of genetically identical lambs could be produced by implanting nuclei from one animal into the enucleated eggs of another, and allow them to develop. There, flocks of identical sheep gamboling through the Scottish moors.

Well, I tells ya, that is most interesting and seems to have raised lots of anguish and questions, perhaps not in *Science* Magazine, which had minimal coverage, but in many (lay) newspapers and magazines. The assumption was made that the next step would, of course, be to clone humans.

The researchers in the lab where the sheep cloning was done say they have no interest in expanding this work to humans, and that the very idea is unethical. Yet someone else might do it, now that the sheep is out of the barn.

I heard newscasters seriously discussing the possibility of cloning lots of little Hitlers, and what would the world come to then? Someone suggested the possibility that one might use the technique to bring back a deceased loved one. On Channel 7 the anchor demonstrated what it would be like by having 2, 4, 16, 32 himselves filling the screen, his colleagues teasing him that it would indeed be a mishap of the first magnitude.

So is it true that "democracy itself" (*Los Angeles Times*) is in danger because of what happened with these English sheep? Is there an imminent danger to humankind? Are we about to be taken over by flocks of cloned droids, or is it all noise hype designed to sell news? Where does the road lead us?

First a bit of history. Briggs and King are famous because in 1952, yes you read right: they took a frog egg, removed its nucleus, and then implanted a nucleus from an embryo, which had already started on the path to development. They found that tadpoles could develop from such eggs. That of course established the principle and feasibility of cloning vertebrates, but no one got very anxious at the prospect at the time.

A decade later, John Gurdon at Oxford carried out a very similar experiment, this time using nuclei from gut and tailfin cells which were "mature," differentiated, instead of embryonic cell nuclei as Briggs and King had done. Some of the differentiated cell nuclei, too, when inserted into an enucleated egg, could guide the development of a new organism all the way to maturity.

So, in fact, these are the people who performed the earliest "cloning" experiments. A similar thing has now been done in sheep, which are much closer to us humans than frogs. Of course some of you will, I am sure, be surprised that I would acknowledge this, myself being a frog in the eyes of all you mutton eaters.

> *We can do as we please with sheep, perhaps, but to clone lots of humans, we would need to have thousands of women volunteer their uteri for nine months in order to grow the clones.*

What is now feared could happen, is that thousands of cells from a single individual could be implanted into thousands of eggs, and allowed to develop into thousands of human clones, which would then take over City Hall or the UN, nay Caltech itself!, and thus enslave the World. Well..... maybe so, but I don't think that this is likely, or even if likely, that it (cloning, not taking over the world) would be a dangerous development. The reasons are many, and I will briefly examine a few scenarios.

We can do as we please with sheep, perhaps, but to clone lots of humans, we would need to have thousands of women volunteer their uteri for 9 months in order to grow the clones. We are not yet at the stage presaged by Aldous Huxley who imagined that babies could eventually be grown in test tubes, rather than in real live mommies.

The rate of success in sheep at present is 1 in 300 or so. At that rate, to produce 100 human clones would require 30,000 volunteers. This would present a problem even if the rate of success were brought up to 1 in 3, assuming that the poor success can be remedied as experimenters become more practiced.

Actually there is data which suggests that practice won't help do better. To simplify, however, we'll assume that the success rate will eventually increase as we understand more clearly why it is so low. Assuming the best in the most horrible world, 100% efficiency in everything, 1000 women could produce 1000 children every year, all the same sex, say female, since sex will be determined by that of the original owner of the donor nucleus. In 15 years there would be 15,000 births, and the oldest 1000 would be able to join the breeding pool. Maybe that's a bit young but I am just rounding things up.

After bearing and rearing 15 offspring, I imagine that their mothers would be pretty exhausted, so in fact the breeding pool would decrease. Of course, one could keep on recruiting new women incubators all along, so the drop would not occur, and may be the breeders could retire after having borne 5 children. That could be achieved by starting with 3000 incubators.

In any case, 15 years after the start of the program one would have the first batch of clones reaching reproductive age and ready to assume some adult tasks, such as Taking Over The World. One would need to wait another 5 years to have a small army, 5000 youngsters aged 15-20. So gathering an army of clones would actually be pretty slow.

There is also the little problem of getting so many eggs. Only one or two eggs mature each month in humans. This could be increased to perhaps a dozen eggs at a time, if they were obtained by superovulation, a technique used in obtaining embryos for *in vitro* fertilization. To make more clones than that at once one would require eggs from different donors, and that raises other problems.

While most genes reside in the nucleus, so that nuclear inheritance is paramount, there is also genetic material found in other organelles, in the case of animals particularly in the mitochondria, which produce the chemical energy the cell uses. So eggs from different women differ not only by their nuclear genome but also in their mitochondrial genome. While it is relatively easy to eliminate the nucleus, removing the mitochondria is another matter.

So if only a small number of clones are needed, then perfect clones can be achieved. Dolly's mother was the egg donor and the mammary nucleus donor both, so Dolly has exactly the same genes, nuclear and mitochondrial that her mother has.

But if multiple sources of

eggs are needed, the clones produced would not be identical, differing by their mitochondrial contribution. They actually would be less similar to each other than identical twins, who share both mitochondrial and nuclear DNA.

That brings us to another realization: identical twins, in spite of having genetics in common, are nevertheless not like worker ants, marching all to the same drummer (unless they chew double mint gum). So why should we expect clones to be unerring followers?

Not only will multiple clones have less than an exactly similar set of genes, they will also have experienced different intrauterine environments. This too may well influence their behavior. Nutrition is an important criterion in development and the different nutritional histories caused by residence in different wombs likely will influence the traits of individual organisms.

Every restaurant today has posters reminding us of the effect of alcoholic beverages on the outcome of pregnancies, and consumption of other drugs (or not taking needed drugs as the case may be) will also have their effects on the fetus. So does diet (how many pickles, how much ice cream), more seriously, how balanced a diet.

After birth the clones will be brought up in different environments (different homes, etc.), which will also affect their future individual behavior. Trying to even out the experience by having an orphanage-like setting will probably not help. I understand that identical twins brought up together are more different than identical twins reared apart. They act in such a way as to express their individuality.

It is now well accepted that early life determines many behavioral parameters. Psychologists and psychiatrists are concerned about their patient's early life experiences because they so strongly influence adult behavior. Obviously these too will contribute to differences between the clones.

But let's stop worrying about these difficulties and assume that they can be overcome by our would-be dictator. Are there any other concerns?

Well, for one, all of these clones will inherit the same genetic defects that are present in the donor. So deficiencies in genes that protect from cancer (a major factor in that disease as we know now), or whatever, would all be inherited by the clones, who would all fall sick at around the same age.

Of course the Human Genome Project might end just in time to allow to predict what disease(s) are hidden in the leader/donor's genes. And what would happen if the leader were found to be a poor donor? Once established, the clones will forever have to be produced by cloning, since only one sex is produced.

Even if one were to produce both a male and a female line of clones, so there could be clone marriages, the offspring would inherit defective genes from both parents. After a couple of generations it would be pretty much like having brother and sister marriages. The strong taboos that have grown against that have not much to do with morality of course, but all to do with the catastrophic effects of too much inbreeding in a human population.

Let's assume that even less than identical clones would do. Even if one relaxes this requirement there are many other problems. In the doomsday scenario, one assumes all the clones would be of one mind, ready to create whatever havoc their maximum leader, in whose image they would presumably have been created, would enjoin them to carry out. Now, the thing is, would all of the clones really do what the mistress of the world had decided? Why would each one of the clones not decide to become the head honcha herself? Why would they not all start tearing at their elders and then at each other? After all, they are alter egos of the ambitious leader!

The only way to prevent this from happening would be to indoctrinate them and teach them to obey the leader, preparing them to take over the world if those are the leader's wishes. But if they have to be indoctrinated in any case, why should clones be better for the purpose than any mongrel Jill or Jack? It seems to me that a clone army is the hard way to go and more trouble than it is worth.

If creating an army of clones does not seem a particularly good way to go, let's instead imagine that only the maximum leader himself is cloned, so he would have a successor worthy of himself (or herself, of course). But he would only get such a successor if he could also duplicate his own life experiences, or the clone might well not follow the desired path.

The generation gap is not a figment, it is an altogether too real phenomenon, which makes communication difficult between people born at different times. The same problem would arise in the case of a family trying to bring back a missed granpapa or a saintly mother. Model and clone may well have many things in common, but, because they would be born in another age, are unlikely to satisfy those who were dreaming of bringing back the past.

Perhaps a reason to produce a clone is to provide compatible organs, spare parts which could be used without risking rejection. But would newborn clone Johnny II have organs which could help the "natural" Johnny I? No, by and large. They would at first be too small and unusable for many years if there could be anyone so callous as to attempt this.

At best one might be able to use blood forming tissues right away, umbilical cord blood, perhaps as a source of cells to repopulate ravaged immune systems. But that, a harmless procedure, has already been done within a family where a new sibling was conceived for this specific purpose. Eyebrows were raised, yes, but it became clear that the baby was not just wanted for spare parts, but would also be loved for its own sake, and eyes seem to soon have closed and eyebrows dropped.

So where does this leave us? Will this sheep cloning open a floodgate for the production of human clones? Not likely. Although the problem should be carefully considered and debated, I do not see clones as the great danger they are depicted to represent.

Andy Rooney said the other night that the question was not if it would be done, because anything that man can do he will, but who would give the go-ahead. I am comforted by the thought that even if the go-ahead were given for nefarious reasons, this would probably not matter. The road to travel seems very difficult and achieves very little in human terms which cannot be done more easily in other ways.

A bientôt, A bientôt, A bientôt, A bientôt, A bientôt, A bientôt, A bientôt, A bientôt, A bientôt (cloned with Word 6 . . .),

now hear this.

BY RON DOLLETE

U2 returns to the music scene with their first release since *Zooropa*'s release in 1993 and 1995's *Original Soundtracks* with producer Brian Eno. The new album, entitled *Pop*, reflects U2's uniqueness and innovation as perhaps the world's premier rock band.

Continuing along the same hard-edged vein as the Zoo TV tour of 1993, the album begins with their first single, the dance hit "Discothèque," and continues with the technofunk sound mixing and bass pounding "Do You Feel Loved" and "Mofo." Of course, *Pop* is simply doused with U2's signature rhythmically driven songs, with Adam Clayton on bass and Larry Mullen on drums (the same duo that brought you the new and improved theme to *Mission: Impossible*)

One of the primary strengths of U2's mysic has always been the lyrics, care of Bono (vocals) and The Edge (guitars). The duo manages to put on paper the cynicism of a whole generation with Bono's usual mix of parallel structure and chaos, high hope and grave doubt.

(In "Mofo," Bono sings, "Lookin' for to fill that God shaped hole. / Mother mother sucking rock and roll / Holy dunc spacejunk comin' in for the splash / white dopes on punk staring into the flash.")

Bono's political activism, like Peter Gabriel and R.E.M.'s Michael Stipe, is reflected in his songs. The song "Staring At The Sun" contains many allusions to the Bosnian conflict, of which Bono has been an active proponent of peace.

Pop continues the experimental mixings of *Zooropa*, ranging from the industrial to the pseudo-spoken word "Miami," reminiscent of Henry Rollins with a lot of bass. One can even sense a bit of country twang in "The Playboy Mansion."

Pop encompasses many genres and as a whole the album lacks uniformity and cohesion, perhaps due to Brian Eno's absence from *Pop*'s production. However, the CD is truly not to be missed and definitely not to be taken lightly. It's sure to fill that U2-shaped hole in your collection.

A.S.C.I.T. Minutes

MARCH 5, 1997

11:05PM - Kohl, Maria, Adrienne, Baldeep, John, Mike, and Devi Thota (ARC Secretary) are trapped in SAC 64, with no hope of escape from the mighty iron grip of ASCIT.

11:15PM - Kiran saunters in with an air of contempt for the the "almighty" Kohl.

Jon McDunn's conspicuous absence is noted and mourned. blech. Maria and Adrienne share a private joke at Kohl's expense.

Mike thinks we should get food for the BOD meetings. Punted.

Lori joins us, frazzled from homework.

Officer Reports:

Baldeep says next year's UROH will include mail codes to send resumes to.

Kiran doesn't like Adrienne. Kohl says that nobody does, so it's okay. Kiran reports that the ASCIT copier will hopefully be equipped with a card reader sometime next term.

Adrienne says that we'll have Really Early ASCIT donuts Thursday/Friday at 1AM, but that was last night, so if you missed it, you lose. blech. Remember there are also normal ASCIT donuts every Friday at 8AM. ASCIT Formal will probably be Friday, May 23. Arrangements for that are underway. blech.

Mike updates the BOD on the Student/Faculty conference, which will be April 15. (April 15 is also Tax Day and the day that Professor McCaffrey's book, *Taxing Women*, will be available for $29.95 in bookstores everywhere.) Check out the articles regarding the Student/Faculty conference in this week's Tech. ARC Rep elections are happening now. ARC Rep-at-Large selections will be early next term.

Lori and the IHC met with the DAPAC Review Committee on Wednesday. Talk to your house president about Caltech's drug and alcohol policy and its review.

A glove is found sticking to the couch. It does not fit Kiran, nor is it bloody. Upon noticing a GIANT spider, Kiran drops the glove and flees the scene in a white Ford Bronco.

John tells us about Patricia Croke, the new bookkeeper for ASCIT, the Tech, and the Big T.

There is a general cry of hallelujah as Maria has "nothing to say." blech.

Kohl talks about the ASCIT Excomm meeting. Read the minutes in this week's Tech. Kohl proposes that we consider a bylaw change to clarify eligibility for ASCIT membership for anyone not currently registered as an undergraduate.

Weary discussion about the ASCIT Movie situation ensues. The ASCIT Movie Team will have a meeting this Sunday at 2PM in SAC Club Room A. Discussion tabled until next week.

Meeting adjourned, and participants run away screaming at 12:55AM.

Respectfully Submitted,
Maria Satterwhite and Adrienne Bourque, ASCIT VP/BoC Chair and ASCIT Social Director

Women's Glee Club celebrates silver anniversary

BY DEVI THOTA

The Women's Glee Club held its Silver Anniversary Concert on Friday February 28, to celebrate 25 years of creating beautiful music. The Women's Glee Club holds the distinction of being the oldest student organization on the Caltech campus. It was started in 1972 with the arrival of conductor Monica J. Hubbard, who has led and shaped the Women's Glee Club since that time. The earliest Women's Glee Club was an extension of the Men's Glee Club, and both toured across the northwestern United States singing (and sometimes even dancing!) as I discovered to my surprise while looking through the old club scrapbooks. Through these, I saw that the creativity and uniqueness of every member of the glee club shone through the years, especially in the scrapbooks that each member had whimsically signed.

The concert revolved around one idea: the Joy of Music. It was with this in mind that Conductor Monica Hubbard chose a beautiful selection of classical pieces, running the emotional gamut from joyful to sad. With the opening "Gott in der Natur" by Franz Schubert , the majesty of female voices raised in unity was revealed. "Aure Volanti" by Francesca Caccini described the gentle comfort of a beautiful day, and invited the listener to relax and enjoy the sweetness of the song. Assorted duets and solos written by Liszt and Hensel showcased the talents of individuals in the glee club as well as the Clef Hangers. Accompanied by undergraduates Carolyn Chan and Rachel Steinberger on the French horn, works by Brahms and Debussy ranged from despair to bounding optimism.

The piece of music commissioned by the Women's Glee Club to celebrate 25 years of singing was titled "Sing We of Music." In the composer Maria Newman's words: "music provides a platform upon which we can express ideas that might not be so easily expressed in other ways." One of the things she wished most to convey was that music is "simply there to be enjoyed."

Maria Newman played an active role in the concert. For her piece, she accompanied the glee club on viola and violin, and changed parts of the piece to fit the glee club during rehearsals. Katie Noyes, a first alto, commented that "it was especially exciting this term to sing a brand new work, and to be able to look down from the risers and see the composer there playing the violin with us." There was a bonding of women during this glee club concert. Being part of the creative process that involved shaping the music to sound its best and gaining the praise of the person who had actually created the music was an enriching experience.

In the lives of many graduate and undergraduate women at Caltech, the Women's Glee Club has been a place to join together through fun and laughter, and hard work and pain. The ties that it creates last, in some cases a lifetime. It is an organization that lives up to Maria Newman's idea that "singing is not reserved for the select few, rather it is for everyone to enjoy regardless of ability or experience." Perhaps this is the reason the club has been a strong part of Caltech so long.

Ath class teaches basics of wine

BY SAMSON TIMONER

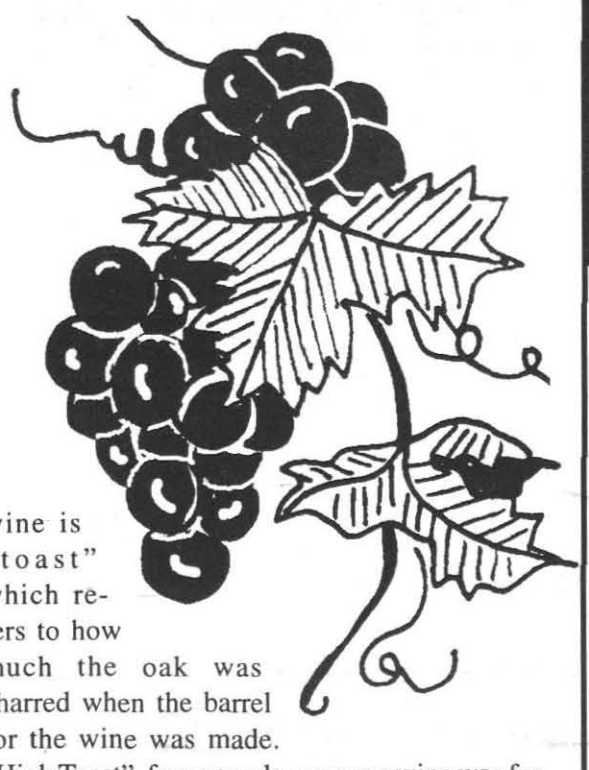
To the surprise and delight of the students, by the end of the evening at the Athenaeum many were able to start to distinguish which ingredients dominated the tastes of each wine they sampled. The class, "Understanding Wine", was led by Mr. Patrick Weiss of the Charles Mondavi Winery with the goal of educating wine lovers in the basics of wine.

The first of the two evening class focused on the details of wine making and the importance of the four major ingredients in wine: tannin, oak extract, acid, and sugar. Participants sipped dilute and concentrated cups of each ingredient to distinguish individual effects. While everyone learned a lot about what affects the taste of wine, many questions remained unanswered at the end of the evening. "Wine education is a lifetime endeavor," lamented Mr. Weiss.

The main lesson for the evening was that a good wine must have a balance of the four major ingredients. Too much acid or too much sugar will make a wine too sweet or too biting. Each ingredient has its own virtues.

Tannin, the first ingredient discussed, gives red wine its texture. It is what makes the wine feel differently to the mouth than fruity water. Tannin is extract of the skin, stem and seeds of the grape. Red wines typically have thousands of parts per million (PPM) tannin resulting from the wine being fermented with the grape skins; white wine typically has very little tannin since the skins are removed before fermentation. Tannin solutions taste bitter to the tongue, but have a sweet aftertaste resulting from the tannins interacting with saliva.

Oak extract lends a vanilla-like flavor to a wine; it is more of a nuance in the wine than a dominating taste, but it is very recognizable. Oak extract enters the wine as the wine as is aged in barrels. In fact, one adjective used to describe wine is "toast" which refers to how much the oak was charred when the barrel for the wine was made. "High Toast", for example, means a wine was fermented in an especially charred barrel.



Rather than tannin, tartaric acid produces the texture of a white wine. The acid is "lemony" and biting to the tongue. It, along with the sugar, dominate the aroma of a wine. The acid tends to heighten the senses in the mouth so that food eaten after drinking a high acid wine (0.5 g to 1 g/100 mL) will taste particularly flavorful. For that reason, dinner wines have more acid then desert wines.

> *"Trust your first impression, not what others say."*
> —*PATRICK WEISS*
> *CHARLES MONDAVI WINERY*

Sugar makes wine flavorful and counteracts the bitterness of the acid. The sugar level in a wine must be controlled extremely precisely so that grapes must be picked at the exact stage of maturity. Desert wines have more sugar that dinner wines, making about 2% of the wine. A dry wine will have about 0.2% sugar in it.

At the end of the evening, those in attendance tasted six different wines to notice how each ingredient affected each wine differently. Many disagreed on which wine was the best.

Mr. Weiss advised everyone, "Trust your first impression, not what others say." A good wine is one which the drinker likes.

Ernest Explains

BY ERNEST TOMLINSON

Dear Ernest,

I'm writing to chew you out over the last column. Where do you get off blatantly stealing a response from your column some three years ago: "Dear Ernest, On What do you blame the recent string of national disasters hitting the Los Angeles area," to which you responded with the same offensive slang that you used last week, except last time "eating snacks" became "drinking coffee."

Dear Anonymous,

Wanker writing letter.

HEY Ernest,

I wasn't finished yet. Furthermore, what about that uncalled for, blatant plug for Ph 4? I mean, what's up with that? Since when did this column start catering to physics majors, anyway? Okay, you can respond now.

-Ticked Off

Dear Off,

I suppose you'd like me to tell you what to do about Scarecrow's brain, too. Are you related to Deep Woods Off?

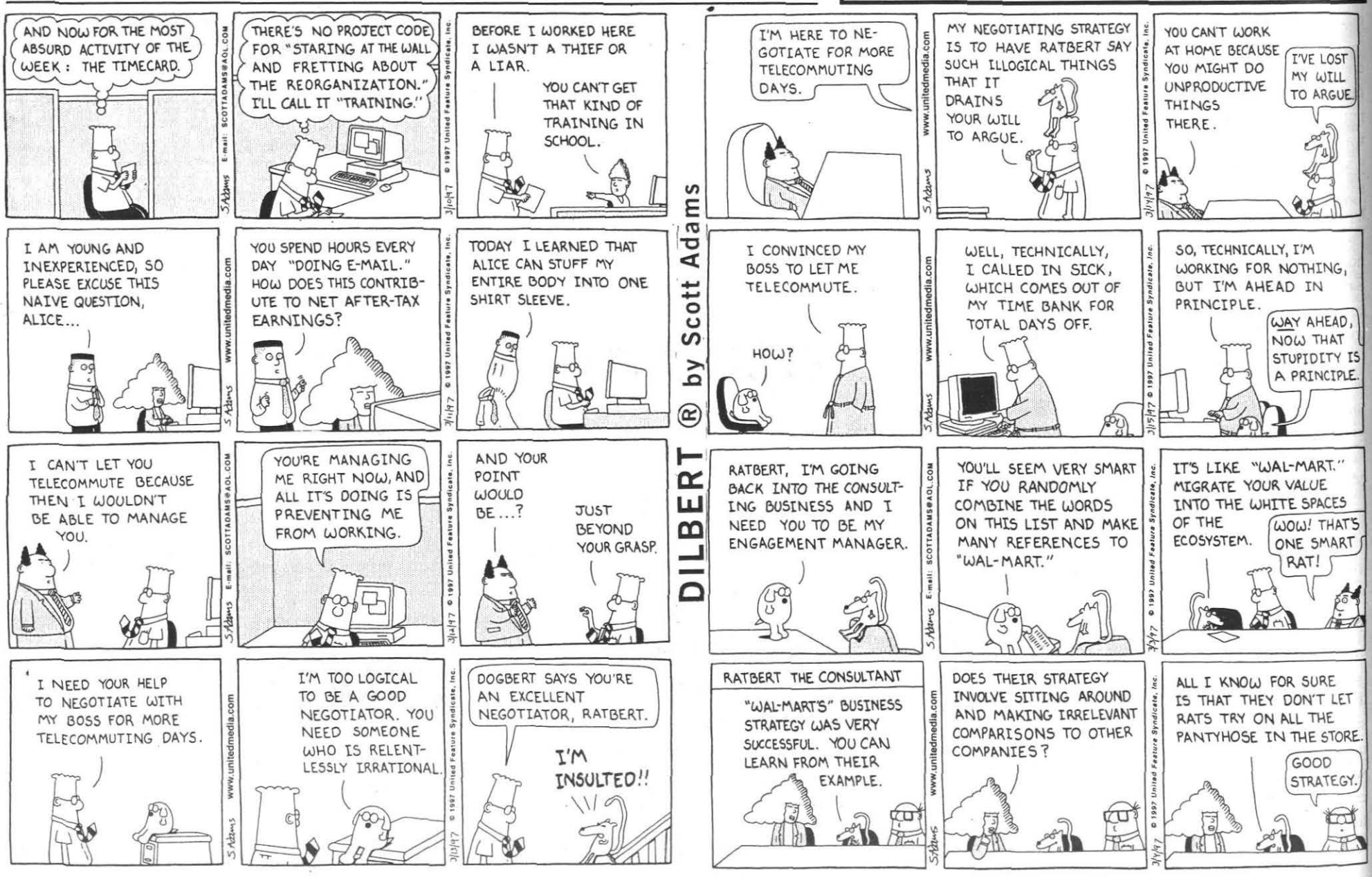
Dear Ernest,

I start a lot of late nights watching Letterman and Leno, and it seems to me that lately these guys are more interested in hogging the limelight than talking to the guests. For every five minute guest segment we get half an hour of Dave saying, "Isn't that right, Paul," while doing some lame comedy bit, or Leno continually interrupting the guest anytime they have something important to say so he can shake his head. It makes me grab for a colortini.

-TS on the Late Late Simulcast

Dear Tom,

Your problem is obviously that you aren't watching late enough. Turn the knob up a click and check out the best show on TV each night: Late Night with Conan O'Brien. Sure, he looks like just another drooling adolescent who made it big, but he is the master. Andy leaves Paul, Ed and Kevin far behind, and, oh, those comedy bits. Of course, Conan doesn't really hold a candle to the all-time true guru of late-night, his run tragically cut short: Pat Sajak.



KOHL: ASCIT's use

CONTINUED FROM PAGE 1

article, "For a Few Dollars More," I posed a few questions about the IHC, about rotation mostly. The only response I got back was shock — surprise that *I*, as ASCIT President, would "attack" the IHC.

That wasn't an attack, incidentally. Trust me, you'll know when I attack somebody. I sure hope the IHC didn't take it that way. As president, I think I have as much right (and responsibility) as other ASCIT members to poke my nose into the goings on at Caltech. Correct me, please, if you disagree.

I'm actually kinda surprised that no one has posted to caltech.ihc. I'll post that article there, just in case you missed it.

One more thing. We recently got a request by a non-undergraduate for membership in ASCIT. To interpret the By-laws, a meeting of the ASCIT Executive Committee was called. Read those minutes (elsewhere in this issue) if you're interested.

Well, I'm done now. Read the ASCIT BoD minutes, if you haven't already done so. If you have input to give, don't hesitate to email me at kohl@cco, or ASCIT at ascit@cco. Post to the newsgroups caltech.ascit and caltech.ihc — they're pretty efficient for sharing ideas. Please also feel free to drop by our ASCIT BoD meetings, on Wednesday nights at 23:00 in SAC 64. You don't have to say anything, if you don't want to. And, as always, my office hours are from Doughnuts 'till lunch on the Olive Walk (Fridays 8:00 to 12:00).

Thanks for reading,

Kohl

SIGMA Xi seeks nominations

BY FAY PENG

Sigma Xi is a prestigious national scientific research society that was found in 1886 as a honor society for scientists and engineers. The Caltech chapter is currently seeking nominations for new members from the faculty on campus and the division managers at JPL. Election to membership is based on research aptitude or research achievement—not on scholastic performance as measured by grades, and not on the possession of any degrees. Therefore, undergraduate and graduate students, research fellows, and JPL staff members are all qualified as nominees.

There are three kinds of nominations to be made: Associate Membership, Promotion from Associate to Full Membership, and Full Membership. An Associate Member is a person who has demonstrated aptitude for research through, for example, a SURF or other research project, and his/her efforts deserve recognition and encouragements. A Full Member is someone who has displayed noteworthy achievement through publications, patents, written reports, or similar means. The deadline for the faculty to send in the nomination forms is Tuesday, March 11 (extension can be granted for special circumstances).

If you believe that you are qualified to be a Sigma Xi chapter member and would like to be nominated, there are two possible ways to ask for nomination. First, you could approach your research advisor, and simply ask him to nominate you. The second and the more assertive way is to fetch a nomination form directly from Sandra Estes in the Dean's Office, and give it to your research advisor.

Once the nominations have been completed, the Sigma Xi membership committee will review the applications and elect new Members and Associated Members. In April, the committee will send out offerings of membership to the nominees, which they can then decide to accept or decline.

An induction ceremony and an annual banquet will take place on May 22 this year to welcome new members. Highlights during the banquet include a half-hour scientific talk by a guest speaker on his current research. If you would like more information concerning Sigma Xi, please feel free to contact Sandra in the Dean's Office, or Fay Peng at *fpeng@cco.*

Baseball Veterans Committee elects Lasorda to Hall of Fame

BY MASON A. PORTER

Last Wednesday, Major League Baseball's Veterans Committee elected former Dodger manager (and current Dodger vice president) Tommy Lasorda to baseball's Hall of Fame. Also elected were former Chicago White Sox second baseman Nellie Fox and former Negro League shortstop Willie Wells.

Lasorda stepped down as Dodgers manager (and was replaced by former Dodger shortstop Bill Russell) last summer, because he suffered a heart attack. (Rumors persist, however, that he was compelled to step down to some degree.) Lasorda was named a vice president of the team the same day.

Before taking over for Walter Alston on September 29, 1976, Lasorda had played baseball professionally for 11 years. He only had a couple of years of major league service, but he made a name for himself in Montreal due to his stellar performance with the Triple-A Montreal Royals (the Dodgers' top farm club at the time) of the International League. He then managed 8 seasons in the minor leagues before spending 1973-1976 as a coach with the Dodgers.

Lasorda, 69, is only the fourteenth manager ever elected to the Hall of Fame, and his credentials certainly justified his selection. Indeed, he was elected unanimously by the Veterans Committee. Lasorda won more games than all but 12 other managers. Lasorda's 1599-1435 record in 20 years as Dodgers manager placed him just three wins behind Fred Clark and just ahead of Dick Williams. Lasorda led the Dodgers to four National League pennants and two World Series titles (1981, 1988). Lasorda is one of just four managers to guide one team for at least twenty years. The others are Connie Mack (who managed the Philadelphia Athletics for 50 seasons), John McGraw (31 years with the New York Giants), and Walter Alston (23 years with the Dodgers). Tommy Lasorda's 61 postseason games managed ranks second all time to Casey Stengel's 63.

Lasorda's many accomplishments, however, are belied by mere statistics. He recognized that the ultimate purpose of baseball is to entertain the fans, and that is exactly what he did throughout his tenure as Dodger skipper. Moreover, he served as perhaps the finest ambassador the game has ever known. He has travelled throughout the world preaching the virtues of the game of baseball and the glory of the Dodgers. Additionally, he makes countless public speaking and charity appearances every year. Lasorda has also earned the utmost respect from his players and his peers. Brett Butler, for example, stated, "Tommy is a baseball fixture. It is an honor to have played for him. He is the greatest manager I have played for." Lasorda is a Hall of Famer in every sense of the term.

Said Lasorda, "I want to thank all the guys who made this possible. It's the greatest thing that ever happened to me." He was more specific when talking to Dodger broadcaster Ross Porter during the Dodgers spring training game against the Montreal Expos. In typical Lasorda fashion (he loves being an entertainer), his voice was cracking during the entire interview. He reiterated how honored and overwhelmed he was before going on a thanking spree. Among those he acknowledged were his players, the press, and Dodgers announcers Vin Scully, Ross Porter, Rick Monday (who also played for Lasorda), and the late Don Drysdale. For some reason, he neglected to mention former Dodger announcer Jerry Doggett at this time. Lasorda reserved a special show of gratitude for Dodger owner Peter O'Malley and his "mentor" Al Campanis (who use to be the Dodgers' general manager), who is currently hospitalized.

Lasorda will be inducted (along with Phil Niekro, Nellie Fox, and Willie Wells) on August 3 in Cooperstown, New York. Ironically, the Dodgers will be playing in this year's Hall of Fame Game (to be played on August 4 against the San Diego Padres), so Lasorda's concomitant induction is especially appropriate.

Nellie Fox, whose 19 year Major League career ended in 1965, was a second baseman primarily for the Chicago White Sox. He also played with Houston for a short time. He compiled 2663 hits and played on ten all-star teams. Fox had been named on the necessary 75% of the Veterans Committee ballots in 1996, but was denied election to the Hall of Fame because of the rule that the committee can elect only one player in the "former player" category each year. Last year, Jim Bunning received one more vote than Fox. Fox also came close to Hall of Fame election in 1985, his 15th and final year on the regular ballot. He received 295 of the necessary 297 votes. Players who come sufficiently close to election by the baseball writers and remain on the ballot all 15 years are eligible to be considered for election by the Veterans Committee. Eighteen other players were considered by the Veterans Committee this year. Some notable names among these players are Pete Browning, Dominic DiMaggio (Joe's brother), Larry Doby, Wes Ferrel, Jack Glasscock, Joe Gordon, Gil Hodges, Marty Marion, Bill Mazeroski, and Allie Reynolds.

In addition to former Major Leaguers, the Veterans Committee may elect people from three other categories: players from the pre-1900 era, Negro League players, and a composite category consisting of managers, executives, umpires, and pioneers. The Veterans Committee consists of 15 members. One third are former players (Yogi Berra, Monte Irvin, Stan Musial, Pee Wee Reese, and Ted Williams), one third are former executives (Joe Brown, Buzzie Bavasi, Buck O'Neil, Hank Peters, and Bill White), and one third are media members (Bob Broeg, Ken Coleman, Leonard Koppett, Allen Lewis, and Jerome Holtzmann).

Caltech tennis teams fight hard against Redlands, Biola

Men's

BY CALTECH SPORTS

On February 15, the Caltech men's tennis team traveled to Redlands to play in their second conference match. The Beavers lost 0-9 to the Bulldog powerhouse, but there were some highlights for the Techers. Freshman Matt Musick, playing at number three singles, took his opponent to three sets. At number two doubles, Musick and partner Jeff Custer played two hard sets, losing 6-3, 6-4. At number one doubles, Ronak Bhatt and Jason Jenkins also had a tough three set match, 6-3, 0-6, 2-6. Coach Gillam assured, "To win sets against an excellent Redlands team is quite an achievement and highlights Caltech's continuing improvement."

On February 21, the Beavers traveled to the land of the Poets. It was a heartbreaking loss for the Beavers. In singles, Bhatt, at number one, lost 2-6, 6-7. Musick (number two) lost 3-6, 5-7. At number three, Jenkins won 6-2, 7-5. Custer (number four) won a tough three setter, 6-4, 5-7, 6-3. At number five, Eric Dennis lost 3-6, 4-6 and at number six, Kanwar Kahlon lost a hard three setter, 0-6, 6-4, 5-7. Number two doubles was canceled due to impending darkness, so the final score was Caltech 3, Whittier 5.

On February 22, Caltech hit the road once again to battle Biola. The Beavers lost a very close 4-3 decision. Playing under Biola's league play format, which counts the entire doubles competition as one point, Caltech lost a very close doubles match 8-6 at number one. The Beavers split the other two doubles matches and thus entered the singles play down 0-1. Caltech and Biola split the singles competition 3-3. Jenkins, playing at number one, lost 4-6, 1-6. Bhatt (number two) played the best match of the day, winning a long three setter, 4-6, 6-0, 6-3. Gabe Miller, playing at number five, won easily 6-0, 6-3. And at number six, freshman Stefan Kazachki played very well in his first scoring intercollegiate tennis match, winning 6-0, 6-0.

On February 26, Caltech hosted Chapman. The Beavers lost 9-0 to a tough Chapman team. Their opponents most recently lost 5-4 to Redlands and fielded a team of very solid players from top to bottom. Bhatt, at number one, played a very competitive match, losing 1-6, 3-6. Bhatt/Jenkins, at number one doubles, played very well, losing 3-6, 3-6. Caltech had several break point opportunities which would have made the match even closer. Kahlon and Miller (number three doubles) also played very competitively but lost 3-6, 3-6. Coach Gillam stated, "All the Caltech players are gaining valuable match play experience against tough opponents..."

Women's

BY CALTECH SPORTS

The Women's tennis team opened their SCIAC play with a home match against Redlands. The Beavers battled the Bulldogs in a hard fought, five hour match. Caltech made their opponents work hard for their points. Despite a 8-1 loss, Coach Nelson was very pleased with her team's performance. She stated, "We did what we wanted to: played some good matches and won a handful of sets, gained a point..." At the number one in singles, Alexis Johnson had a long match — over three hours. She lost 4-6, 7-6 (7-1), 7-6 (7-1). Lena Petrovic (number two) also lost a tough three set match, 6-7 (7-4), 6-4, 6-0. Natsuko Kagawa also had a three set match; she won her first 6-4, but could not keep it together in the next two, losing 3-6, 1-6. At number five, Audrey Lee played a strong second set after dropping the first 6-0. She rallied back with consistent, high-percentage hitting before losing the second 7-5. Caltech's lone win came at number 1 doubles, with Petrovic/Kagawa playing a great match. They dominated the match with smart play and effective shot-making, winning 6-3, 6-2.

On February 21, Caltech hosted the Whittier Poets. In a long five hour match, the Beavers came up victorious winning 7-2. Strong singles play put CIT up 4-2 going into doubles. Number one singles, Johnson, fought hard through a three set match to avenge an earlier loss this season, winning 4-6, 6-2, 6-4. Petrovic, at number two, won easily 6-3, 6-3. Chang-Chien (number four) came back in the 2nd set from 1-4 to win 7-5 after a first set win of 6-2. Lee (number five), also won easily 6-2, 6-1. Playing at number seven, Amanda Schaffer won 6-0, 6-1. The Beavers played strong and swept the doubles with Petrovic/Kagawa in the number one spot, winning 6-3, 6-1. Number two doubles, Johnson/Chang-Chien, let up some into the second set, but came back strong in the third to win 6-3, 3-6, 6-1. And at number three doubles, Lee/O'Rourke dominated their match, winning 6-1, 6-0.

One day later, the Lady Techers hosted another long, tough five hour SCIAC match. The Beavers were looking to end Cal-Lutheran's streak of four 5-4 wins over Caltech. The Techers strong singles matches proved that they came out ready for the battle. Going into doubles, Caltech was up 4-2. Johnson (number one), struggled in the first set, but changed things around and won 3-6, 6-0, 6-3. Petrovic (number two) avenged an earlier three set loss this season. She controlled the match with strong, confident play, and won 6-1, 6-3. Kagawa (number three) won easily, 6-1, 6-4. Lee (number five) lost a tough three-setter 3-6, 6-4, 6-4. O'Rourke (number six) won easily with steady play, 6-1, 6-2.

Petrovic/Kagawa (number one) continued with their aggressive play and won 6-0, 6-3. Johnson/Chang-Chien (number two) also came out victorious in a tough three set match, 6-7 (7-5), 6-3, 7-6 (7-5). Caltech won another SCIAC match 6-3. Coach Nelson confirmed, "It was huge team effort from every team member. I'm very proud of what they accomplished."

On February 26, the Lady Techers traveled to Palo Verdes to take on Marymount. Chang-Chien (number four singles) got CIT's first point with a dominating 6-0, 6-0 victory. Petrovic (number two) also won easily 6-1, 6-1. At number three, Kagawa won 6-4, 6-1. Lee (number five) and Schaffer (number six) also both won their singles, 6-1, 6-3, and 6-4, 6-3, respectively. Johnson (number one) had a heartbreaking loss in three sets. In doubles, they played pro-sets with wins at number 2 and 3, both winning 8-3. Caltech won 7-1.

Mints

Ψ denotes a new announcement.

Events

This week's ASCIT Movie is ***Aliens***. Showing at 7:30pm and 10:00pm in Baxter Lecture Hall. Admission for ASCIT members is $2.00, and $2.50 for non-members.

The **Men's Glee Club** will give its winter concert in Ramo Auditorium on March 7th and 8th, at 8pm. Under the direction of Donald Caldwell, the Glee Club will present a two-part program featuring folk songs from around the world. Admission is free. For more information call x4652.

Ladysmith Black Mambazo will perform on Friday, March 14th, at 8pm, in Beckman Auditorium. A Zulu art, their cappella singing and high-kicking dance gained international renown as part of Paul Simon's Graceland album and tour. Ladysmith Black Mambazo has recorded thirty albums, establishing them as the number one record-selling group in Africa. Caltech student admission is $5.00. For more information call x4652.

Ψ The lecture "**The Works of Anna Wolf**" will be given at PCC in Robbins Building, Room 122. The lecture, sponsored by **The Society for Calligraphy**, will be held at 8:00pm on March 14th, and will be preceded by a reception at 7:30pm. The presentation will explore the results of fifteen years of teaching book structures and making artist's books. The lecture is free and open to the public.

Ψ Faustwork Mask Theater's "**The Mask Messengers**" will be performing in Beckman Auditorium, on Saturday, March 15th, at 2pm. Two actors assume the characters expressed in the faces of masks from around the world. Caltech student admission is $5.00. For more information call x4652.

Ψ The Golub-Kaplan-Carr Trio will be performing at Beckman Auditorium, on Sunday, March 16th, at 3:30pm. This Coleman Chamber Concert features celebrated solo artists David Golub, Mark Kaplan and Colin Carr with artist, violist Michael Tree. The program will include works by Beethoven, Shumann, and Fauré. Fifty free tickets will be available to Caltech students beginning March 11th. For more information call x4652.

The **UASH** meeting scheduled for April 1st has been changed to Monday, March 31st, 1997 at 9am. All reinstatement and miscellaneous petitions must be turned in by Friday, March 28th at 4pm.

Salsa classes with Richard Orozco of Let's Dance LA continue during February in the Dabney Lounge Thursday nights this term from 7pm to 8:30pm. The cost is $3.75 to Caltech undergraduates, $5.00 to other Caltech and JPL affiliates, $5.50 to non-affiliates. Beginners, singles, and couples are welcome. The classes are sponsored by the Caltech Ballroom Dance Club with professional instructors from Let's Dance LA. For more information call Adam Showman at 796-1098 or *showman@earth1.gps.caltech.edu.*

The Caltech Ballroom Dance Club will offer free beginner **Waltz lessons** in Winnett Lounge 8-9:30pm Wednesday evenings, Feb 5th, Feb 12th, and Feb 26th. A Viennese Waltz crash course will follow. Check out the club's new web page: *http://www.caltech.edu/~ballroom.*

The **Prefrosh are coming**! Prefrosh Weekend will be held from Thursday, April 17th until Sunday, April 20th. Any organizations, groups, or departments wishing to hold Prefrosh Weekend activities are encouranged to contact the Prefrosh Weekend Planning Committee to organize scheduling, etc. Also, any comments or suggestions about Prefrosh Weekend will be welcomed. Send email to *dina@ad-missions.caltech.edu* or call the Admissions Office at x6341.

From the Counseling Center

Looking for a safe and supportive place to discuss issues such as coming out, being out, dealing with family, coping with a homophobic culture, and being GLB at Caltech? Want somewhere just to make new friends? You are invited to the **Gay/Lesbian/Bisexual Support Group**, which meets on the first and third Tuesdays of each month from 7:30pm till 10:00pm in the Health Center lounge. This is a confidential meeting and attending does not imply anything about a person's sexual orientation—only that he or she is willing to be supportive in this setting. The group usually discusses a particular relevant topic and then moves on to the general discussion. Refreshments are served. If you would like more information, please call x8331.

Stress Management for Students

For help in learning how to relax and manage stress, Jon Pedersen, Ph.D., and Fern Klapper, M.A., of the Caltech Counseling Center, will be offering a four-week workshop beginning February 11th. On each of four consecutive Tuesdays, from 12:00 - 12:50pm, a variety of practical, simple, and effective techniques will be taught, ranging from progressive relaxation to basic meditation techniques to the principles of heathly living. The sessions will be primarily experiential and will build on material from the previous week. This workshop is open to any student and if you are interested, please contact Dr. Pedersen at x8331.

The Caltech Counseling Center is sponsoring a program entitled "Stress Management in the First Two Years of Graduate School." This program will consist of a discussion and presentation by a panel of graduate students (Selena Forman, Weng Ki Ching, and Ivett Leyva) and Counseling Center staff Aimee Ellicott, Ph.D. and Deborah Southerland, M.A. We will focus on the specific kinds of stress grads encounter as first and second year students, such as adjustng to graduate school, qualifying exams and relationships with advisors. The program is open to all graduate students and will be held on Thrusday, February 13th, from 6:00-7:30pm in Winnett Clubroom One. Light refreshments will be provided.

If you have any questions about these programs or want to discuss your individual questions or concerns regarding coping with stress, please contact the Counseling Center at x8331

Fellowships and Scholarships

College students who are U.S. citizens and have a grade point average of 'B+' or better are eligible for a $1000 college scholarship. To receive an application, send a request by **April 11th**, 1997 to the **Educational Communications Sholarship Foundation** at 721 North McKinley Road, PO Box 5012, Lake Forest, IL 60045-5012; fax a request to (847) 295-3972; or e-mail a request to *scholar@ ecilf.com*. All requests for applications must include the student's name, permanent home address, city, state, zip code, name of college, appropriate GPA, and year in school during the 1996-1997 academic year. Applications will be fulfilled by mail only, on or about April 22nd, 1997. Thirty-five winners will be selected on the basis of academic performance, involvement in extracurricular activities, and some consideration for financial need. A total of $35,000 will be awarded.

Literature Prize Announced. The Literature faculty is pleased to announce the 51st Annual McKinney Competition. The Mary A. Earl McKinney Prize is awarded each year for excellence in writing. Only full-time students officially registered at Caltech as undergraduates are eligible to enter the competition. This year, prizes will be given in three categories: poetry, prose fiction, and non-fiction essays. All submissions must be typewritten and double-spaced. In the poetry category, entrants may submit up to three poems. Submissions of prose fiction should not exceed 12,000 words. Essays may be ones prepared for a humanities class or any good piece of original writing on a topic relevant to the humanities. The prizes in each category will be $300. Each student is entitled to only one entry in each category. All contestants must submit their work to Professor Jenijoy La Belle, Division of the Humanities and Social Sciences, 101-40, by no later than **April 4, 1997**. No entries will be returned. Each category will be judged by a committee from the Literature faculty. Essays will be judged on the quality of thought and the effectiveness of the writing. Winners will be announced in May, and the names of the winners will appear in the commencement program. The Committee may divide the award in each category in case of more than one outstanding submission. Previous winners in any one category are not eligible for the competition in that category. If you have any questions, contact Professor La Belle, x3605, or Doreen Domb, x3610.

From the Fellowships Advising and Resources Office, x2150, e-mail lauren_stolper @starbase1.caltech.edu*:*

The **American Association of University Women** offers a number of fellowships to women who are U.S. citizens or permanent residents, including one year post-doctoral fellowships and special dissertation fellowships. The international fellowship is awarded to women who are not citizens of the U.S. or permanent residents who are engaged in full-time grade or post-graduate study in the U.S. A poster with a tear-off card that allows you to send for an application is posted on our main bulletin board.

From the Financial Aid Office, 515 S. Wilson, second floor:

The **American Women's Club in Sweden** will be awarding a travel grant for study and research in Sweden. To qualify you must be a woman, age 18 or over, and an American citizen. You must also be accepted for a period of study or research at a Swedish educational institution or agency and show evidence of financial need. The completed application and all supporting documents must be received by **April 15th**, 1997.

The Jewish Vocational Service is accepting applications for scholarships from the **Jewish Community Scholarship Fund**. The scholarships are designed to provide financial assistance to Jewish students who are legal residents of Los Angeles County, attending college on a full-time basis. Applicants must have a 2.5 minimum G.P.A., must be a sophomore or higher by September 1997, and must be able to document significant financial need. The deadline for submission of completed applications is **April 15th**, 1997.

The **Danville-Alamo Branch of the American Association of University Women (AAUW)** will be awarding several scholarships of $500-$1,000 to female college students who will be juniors or seniors as of September, 1997, and who have lived in the San Ramon Valley, or have attended school there. Applicants will be evaluated on the basis of scholarship, achievement, educational goals, financial need, and campus or community involvement. An application package can be obtained from: Mary Ann Osborne, 2530 Roundhill Drive, Alamo, CA 94507. Completed applications must be postmarked by Tuesday, **April 1st**, 1997.

The **John Gyles Education Fund** is offering financial assistance to students who are Canadian or U.S. Citizens. A minimum G.P.A. of 2.7 is required for eligibility. Criteria other than academic ability and financial need are considered in the selection process. Selected students will receive up to $3,000. To receive an application, send a stamped (U.S. $ .32), self-addressed, No. 10 envelope to: The John Gyles Education Fund, Attention: R. James Cougle, Administrator, P.O. Box 4808, 712 Riverside Drive, Fredericton, New Brunswick, Canada E3B 5G4. Filing dates for mailing applications in 1997 are **April 1st**, **June 15th**, and **November 15th**, 1997.

The **Chinese-American Educational Foundation** announces its scholarship program for students of Chinese descent. Eligible students are graduate students or undergraduates who are juniors or seniors, and who will be enrolled full-time in Fall of 1997. Eligible students must also be U.S. Citizens or permanent residents. There are two $1500 scholarships available for graduate students and seven $1000 scholarships available for undergraduate students. The deadline to submit applications is **March 31st**, 1997.

The **ACIL (formerly the American Council of Independent Laboratories) Scholarship Alliance** is offering scholarships for students majoring in the physical sciences: physics, chemistry, engineering, geology, biology, or environmental science. Awards are based on academic performance, career goals, leadership, and financial need, and are typically $1,000-$2,000. To apply you must be a junior or senior in undergraduate study, or a graduate student. Applications and all supporting documents are due **April 15th**, 1997.

The **Coalition of Higher Education Assistance Organizations (COHEAO)** is pleased to present an opportunity for students to apply for three $1,000 scholarships and three $200 runner-up awards. Applications and supporting documents are due **May 15th**, 1997.

The **American Scandinavian Foundation** of Los Angeles will be awarding five scholarships of $1,000 each to upper division and graduate students. Applicants must exhibit a connection to Scandinavia via life experience, field of study, or heritage. Applications and supporting documents are due **March 21st**, 1997. To request an application, write to: James Koenig, ASFLA Scholarship Chairman, 3445 Winslow Drive, Los Angeles, CA 90026.

The Sunkyong Group of Korea and LeaderShape Inc. are sponsoring the "**Global Leaders of Tomorrow**" essay contest. Entrants must be undergraduate or graduate students at the time their entries are submitted. Essays may be written from one of four perspectives: Business, Government/Law, Science, or Media/Communications. Three winners will be selected in each of these 4 categories. First prize (1 winner in each category) is $2,500 plus a one week trip to Korea. Second prize (1 winner per category) is $500 plus one week at a LeaderShape training program. Third prize (1 winner per category) is $500. The Financial Aid Office has more information. The deadline for entries is **April 15th**, 1997.

THE CALIFORNIA TECH
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