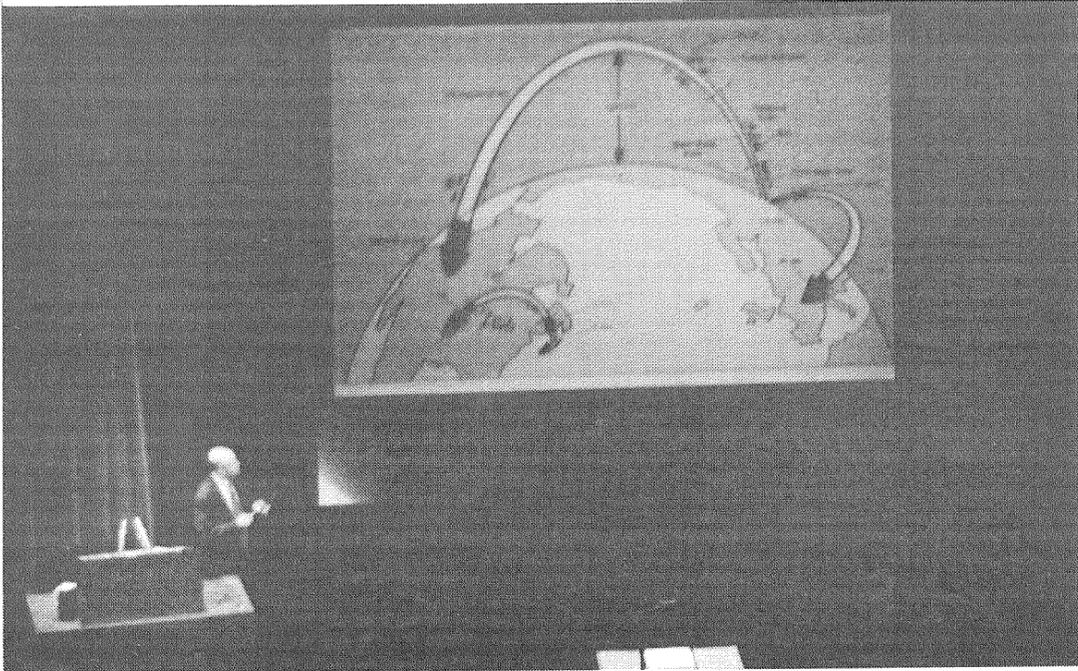


Add

# The California Tech

Day!

VOLUME LXXXIX NUMBER 4 PASADENA CALIFORNIA FRIDAY 16 OCTOBER 1987



Professor Yariv explains SDI technology.

photo by Michael Keating

## SURFing Pasadena's Sandy Beaches

by Mark Huie

Hey, man, tomorrow the surf's really gonna be gnarly, dude. You know what I mean? Sure you do. Maybe I should say SURF's up! Better? Sure. You know what that means. Everybody who SURF'ed last summer was up all night last night putting the finishing touches on their SURF reports and preparing speeches (It makes me think of the life of a Tech editor.) and you want to see them make fools of themselves, ask asinine questions, or actually see what they've spent all summer doing.

There is not enough room here to list everybody who is giving their surf reports tomorrow, but here is a listing of where division reports are being given:

- Mathematics: 113 Spalding
- Computer Science: 113 Spalding and 72 and 74 Jorgensen
- CANSAT (The satellite surf team): 210 Thomas
- Planetary Science: 206 and 306 Thomas
- Earth and Space Sciences: 206 and 306 Thomas
- Geology: 206 Thomas
- Humanities And Social Sciences: 142 Keck
- Physics: 125 and 127 Baxter
- Environmental Engineering Science And Mechanical Engineering: 128 Baxter
- Mechanical Engineering and Aeronautics: 128 Baxter
- Engineering, Electrical Engineering and Applied Physics: 210 Baxter
- Pure And Applied aspects of High Temperature Superconductors: 218 Baxter
- Astrophysics and Astronomy: 237 Baxter

- Biology: 102 and 104 Spalding
- Chemistry and Chemical Engineering: 104 and 106 Spalding

## Building a Better Bomb - Trap

by Glenn Tesler

On March 23, 1983, President Reagan proposed the Strategic Defense Initiative (SDI), a major technological and intellectual undertaking designed to render nuclear weapons obsolete. In November 1984, a study group of the American Physical Society was formed to study the scientific and technical feasibility of the Strategic Defense Initiative, popularly known as Star Wars. Caltech Professor of Applied Physics Amnon Yariv, a member of this committee, discussed technical aspects of SDI and presented a summary of the committee's findings in the first Watson Lecture of the school year.

Professor Yariv's talk focused on Intercontinental Ballistic Missile (ICBM) technology, expected improvements in ICBMs, and weapon systems designed to attack ICBMs. A modern ICBM is a device used to launch and aim from one to ten missiles at independent targets. An ICBM is launched much like an ordinary rocket.

The boost phase, the first phase of an ICBM's trajectory, brings the missile and warheads to an altitude of 180 kilometers. Three stages of the ICBM's rockets are shed during this phase, which can last up to five minutes. Only the bus, the part of the ICBM containing the warheads, remains for the post-boost or second phase of the trajectory.

Over a five minute period during the post-boost phase, warheads and decoys are aimed and launched one at a time. A warhead (or decoy) launched between the Soviet Union and the United States spends about twenty-two minutes in the mid-course phase and then reenters the atmosphere. Twenty to forty seconds into the terminal phase, the warheads detonate.

The boost phase is the ideal time to attack an ICBM. Hot gasses from the ICBM's rockets propel it out of the atmosphere, making the missile easy to detect. Due to the high vulnerability of ICBMs during this phase, it is surmised that both the United States and the Soviet Union plan to shorten its duration.

During the post-boost phase, the warheads separate from the ICBM, increasing the number of targets that a defensive system must detect. The warheads now travel without any propulsion, making detection more difficult. Large quantities of sophisticated decoys, which are much cheaper and not easily distinguishable from real warheads, further complicate the detection of true warheads by a defensive system.

As the boost phase lasts a short time, attacking an ICBM during the boost phase requires detecting and destroying the ICBM quickly. Directed energy weapons, including particle beams, which can travel at nearly the speed of light, and laser beams, which do travel at the speed of light, are potentially useful weapons for such rapid destruction. Several types of lasers, including free electron, x-ray, and chemical lasers, were discussed. Lasers could be located in space or on the ground, and networks of mirrors in space could redirect the beams at the targets. Unfortunately, the Earth's atmosphere modifies the paths of laser beams and reduces their intensity. Much current research is devoted to decreasing and counterbalancing the atmospheric distortion through large deformable mirrors which can distort a laser beam in such a manner as to exactly cancel the distortion the laser beam will encounter in the atmosphere. Caltech graduates and current members of the Caltech community have performed much of the research in this area.

Many schemes can be used to counteract the effectiveness of lasers. Prior to an all-out attack, space-based platforms containing lasers, mirrors, and other equipment could be destroyed or blinded by detonating a nuclear weapon in their vicinity. Rotating boosters and boosters coated with special shields could reduce the effectiveness of lasers by decreasing their effective intensity. Redesign of the post-boost phase could allow the launch of warheads more quickly and at lower altitudes. At lower altitudes, x-ray lasers would be rendered ineffective, and the effectiveness of other lasers would be greatly reduced.

None of the lasers currently in existence are powerful enough to be used as an effective part of the Strategic Defense Initiative. The panel of the American Physical Society determined that even in the best of circumstances, a decade or more of intensive research would be required to provide the technical knowledge needed to make an informed decision about the potential effectiveness and survivability of directed energy weapon systems. Though the technology involved in such systems isn't fully understood, there's a lot of pressure for Congress to spend money on untested technologies rather than basic research in the hopes of producing more immediate results. Professor Yariv feels this is unwise, and hopes that the report recently issued by the panel will influence Congress to spend money directly on basic research.

Professor Yariv graduated from the University of California at Berkeley with both Bachelor's and Doctoral degrees in Electrical Engineering. After working at Bell Telephone Research Laboratories, he came to Caltech in 1964. Among Professor Yariv's major research achievements is work with lasers, integrated optoelectronic circuits and phase conjugate optics.

Vote! Vote! Vote!  
Vote! Vote! Vote!  
Vote! Vote! Vote!

## ASCIT Elections

by Jeff Tekanic

O.K. So maybe it loses something in the translation. Anyway, today is the run-off for the offices of Senior Class President, Senior Class Secretary/Treasurer and Junior Class President. Sorry frosh and sophomores (and those people who still think they are), this is a Senior & Junior class vote only. Here are your candidates:

- Senior Class President:  
Rich Arrieta  
Wayne Lukens  
Keith Owens
- Senior Class Secretary/Treasurer:  
VanEric Stein  
John Wiltse

Junior Class President:  
Thomas Bewley  
Dawn Sumner

For the Senior Class President election, you seniors may vote for your favorite candidate and cross out your least favorite.

Congratulations to Eric Hassenzahl, the Director of Social Activities; Chris Chu, the Junior Class Secretary/Treasurer; and Eric Fung, Stephen Lew, Tylis Chang and Mark Huie, the *Tech* Editors.

So, once again, seniors and juniors please vote today. Thank you for your continued support!

Vote!

## Tech Meeting In Baxter Hall Today

The staff of the *California Tech* will meet this afternoon in Room 127 of Baxter Lecture hall at 12:30PM. All undergraduates who are interested in writing, news photography, or even editing are invited to attend.

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## LETTERS

## Coffeehouse

To the Editors:

One and a quarter hours to wait for a shake. One and a half for a burger and shake. It's true. I was at the Coffeehouse this week and witnessed both of these events. As I waited about the same amount of time for my own order to be filled.

I think it is very reasonable to expect these waiting periods to be much shorter. Granted, they need more time than usual to prepare food as appetizing as theirs and to whip up shakes as thick as theirs. I will even concede that they need more time because they are new employees working in the new Coffeehouse. Yet, I waited far too long.

I would like to know why this happened, and whether or not anything is going to be done to correct the situation. I will not go to the Coffeehouse knowing the trip will take this long. I urge that prompt action be taken. I hope that it will soon be worth my while to return as its customer.

Sincerely,  
Josh Kurutz

## Ozone Death

To the Editors:

May I offer my solution to the dangerously depleted ozone layer problem. Of course, all chlorofluorocarbons (CFC's) should be totally banned internationally, but that in itself will not heal the ozone layer. It should be possible to repair the ozone layer using my method. First, manufacture ozone and liquefy it (LOZ). Then load the LOZ aboard large military refueling tanker aircraft. These aircraft would then climb to their maximum altitude above forty thousand feet, the lower level of the ozone layer. As they distribute ozone by spraying it, the strong upper level jet stream winds at that altitude will carry the ozone even higher aloft, well into the ozone layer where it will stay as desired. Since this is a global crisis, I feel this repair effort should be shared and financed by the U.N. nations cooperatively.

My estimate is that it will cost roughly up to or between fifty to seventy-five million dollars and take from one to five years in total. The ozone layer could be maintained at normalcy with annual or more frequent flights as required.

Finally, it is not too early for everyone to register or change party registration to Democrat in order to vote for Jesse Jackson in the primary. Don't forget to make a campaign contribution also. He has proven himself to be the best candidate with the best solutions and the proven leadership that we

need.

I urge everyone to make copies of this letter to send to the U.N., UNESCO, government officials, university scientists, environmental groups and chain letter fashion to their friends and relatives so that they may do the same.

Leonard De Fazio Jr.  
31 Elmwood Ave.  
Batavia, NY 14020

## Collaboration

To the Editors:

We are writing in regard to the current policy of non-collaboration in Ma 1a. Speaking for the majority of the freshman class, we strongly oppose this policy.

In previous years, students were given the option of working on problem sets with their friends. This prevented students from becoming frustrated and possibly sub-

mitting to a feeling of hopelessness. Such interaction would enable students to gain a new insight into the understanding of calculus. Upperclassmen can attest to the fact that collaboration has aided them in their learning of the material.

We firmly support the re-institution of full collaboration on the handwork-to-turn-in sets. As many students agree, a shared effort would instill a feeling of assurance in their ability to do the work here. In other words, the student would not be intimidated by difficult problems. With collaboration, the student could at least exchange ideas in hopes of arriving at a plausible solution.

As the policy stands, the T.A.'s may not offer their input on the problems; they may only answer questions resembling the hand-in problems. It would benefit the students to work on the actual problems with the T.A.'s.

Sincerely,  
Alecia Chen  
and Susan Schima

## Editors Speak Out

Dear Readers,

The commie-fascists ornamental mafia has taken over!!!! Head for the hills...!%ff\$?][&\*!....

(Take two)

Dear Readers,

In case you haven't noticed, things have changed around here. The California Tech with its brand-new editing crew of Tylis, Slew, Huie, and Eric is ready to usher in a new age of creative journalism. Oh, excuse the above incongruity: it seems that some of these former editor types are unwilling to completely relinquish control. The California Tech will never be the same. As you can see by the dearth of letters on page two, we are swamped with a phenomenal response from all over the country to our new position. What are we to do? Contort all of Bloom County? Run around looking lost? Ask everybody to write letters and articles? Yeah! That's it! If we haven't sought you out yet, we are looking for articles. What to write about? Depleted ozone layers, party registration, electrocuting three legged spiders, anything. (My favorite was the three legged spider.)

Come down to the Tech office in the south hovses basement anytime Wednesday or Thursday nights. Talk, watch, submit copy (only on Wednesday nights please), or bring us food.

What can we say about the Tech? We signed up for this job 'cause we thought, "Hey, this is a great way to waste our Wednesday and Thursday nights." Actually it was more of a chance to screw up

this paper in one and a half terms. Yes, we're aspiring for bigger and better things for this little rinky-dink newspaper. Can we handle the fast life? Will we ever learn to use the typesetter? Will we ever get new speakers for this place? One good note though, the Tech as an entity has finally pulled it roots from Winnett and planted itself in its new and marginally more spacious home in the South Hovse basement.

By the way what do you call this place? "The South Hovse basement" is too long to say. If you have any suggestions, please send them to:

What do you call that place?  
25-58 SAC  
Pasadena, CA. 91125  
SAC means Student Activities Complex, even worse than "South Hovse basement"

I know you're pretty bored of all this, but let's make this interesting. Basically, I'm the only frosh who has (foolishly?) gained the title of "editor." I bring to this prestigious staff experience as an editorialist and editor of a high

## Wet Frosh

To the Editors:

Teachers seem to have a strange fascination with water.

At any moment in the day, it is not unusual to see a wet frosh who has either just been floated, showered, or ponded (or all three). Unfortunately, this causes the poor frosh to be constantly changing clothing. I, myself, have seen a particular frosh need to change his attire four times in one day. After that day the poor frosh didn't dare exit his room for fear of having to change his clothing more than once for that day. (He was short of clothing because of the previous day's event.) I feel particularly bad for the frosh who has been inadvertently chosen as the house's "frosh to wash."

Surprisingly enough, no Caltech frosh has yet drowned from a showering or ponding. (Obviously, the swim test administered

by the athletic department served some purpose.) Understandably, showering the poor frosh has been a favorite pastime at Caltech for decades, but let us not forget about the water shortage, which plagues southern California. Consider, if we continued to engage in such acts, we would run out of water for more important things...like flooding the Blacker courtyard.

We must find a better approach at annoying the hell out of the frosh. Perhaps instead of "a wet frosh is a happy frosh," we could try, "an upside down frosh is a dizzy frosh?!"

Sincerely,  
Water Conscious  
Upperclassman @

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## EDITORS

Tylis Chang • Eric Fung  
Mark Huie • Stephen Lew

## ENTERTAINMENT

Alecia Chen

## PHOTOS

Michael Keating

## SPORTS

Jennifer Low

## ANNOUNCEMENTS

Josh Kurutz

## REPORTERS

Alecia Chen • Marc Turner  
Mark Huie • Paul Lee  
Skip Scholte • Paul Searcy  
Glenn Tesler • Mara Thoner  
Help Wanted

## THE INSIDE WORLD

Blacker: Marty O'Brian  
Dabney: Stanley Chen

## Fleming:

Lloyd: Keith Owens, Sho Kuwamoto  
and John Wiltse

## Page:

Ricketts: Brian Chizever and Gary  
Ludlam  
Ruddock: VanEric Stein and Wayne  
Lukens

## BUSINESS

David Goldreich  
Gavin Claypool  
Johnathan Chow

## PRODUCTION

Nick Smith

Alecia Chen • Susan Schima  
Michael Keating • Jennifer Low  
Josh "the frosh" Kurutz

THE CALIFORNIA TECH  
25-58 Student Activities Center  
California Institute of Technology  
Pasadena, California 91125

Phone: [818] 356-6154

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# Candidate's Statements

## Senior Class President

Well, what can I say? The main point here is I would do my darndest to get an interesting graduation speaker, as opposed to one who sets records for charitable contributions. I'm sure this is an obvious desire of most seniors (and anyone else who has ever attended a commencement), and I would make this as clear as possible to the powers-that-be. I do have some experience as far as the necessary contact-making goes, having worked at the Caltech Public Relations office, been in charge of getting house guests for Lloyd, and having worked as a news reporter for my hometown radio station. You know how it goes; there are no guarantees, but I would do my best.

As far as setting the date for Ditch Day goes, I am fully functional in the operation of calendars. I also feel that I have a reasonably good rapport with much of the senior class, and by that I mean I have been highly intoxicated in most of the houses.

And while you're at it, how 'bout a vote for my worthy Hick Party running mate, John Wiltse for Sec./Treas.

**Keith Owens**

Hello, my name is Wayne, and as you probably well know, I am running for Senior Class President. I'd just like to say that if I am elected, the commencement speaker will be my wife, Morgan Fairchild, whom I have slept with. Impossible, and yet, it happened!

But seriously, if you don't vote for me, your Mommy and Daddy will get very sick and your puppy will die, so I'd appreciate your help. Thanks.

**Wayne Lukens**

## Junior Class President

So what's there to say that I didn't say last week? I want a famous/respected scientist to speak at our graduation. I'll do my best to find one who is also interesting to listen to. For Junior class Pres.,

**Dawn**

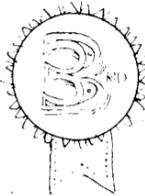
## Senior Class Secretary - Treasurer

Hi, I'm John Wiltse. I'm running for the office of Senior Class Secretary/Treasurer. Although I am running independently, I am aligned with Keith Owens (we're the Hick Party). We share a belief in the need to find a good graduation speaker. I want to know the opinions of as many seniors as possible on this matter. The other thing the Secretary/Treasurer has to do is decide when to have Ditch Day. Hell, I can work a calendar as well as anyone. With this in mind, I urge you to vote for me today.

**John Wiltse**

Hey Seniors! I'm VanEric Stein, and I've made it this far without a statement, so I won't waste anyone's time. I have no scandalous history or illegitimate children, but I do lust after Wayne's wife, Morgan Fairchild, whom I've seen naked. Anyway, I'd appreciate your vote today, and I think I work very well with one of the candidates for class president (and maybe a second), so figure it out for yourself, and vote for him too. Thanks. For Senior Class Sec./Treas.,

**VanEric E. Stein**



# The Inside World

**Blacker:** The following Inside World is dedicated to the memory of Mark Reissig, the most recent casualty of the FroshCrusher.

Welcome, new mole frosh, to the hallowed halls of the Church and the House of Blacker, the two being one and inseparable. The first step in your pilgrimage is now complete. You fared quite well considering your wimpy and inferior nature. Your journey is not over yet, though, as you still must deal with the Black Hand and the shit-kickers of Antioch. Sylvia, this means you.

In other, more secular news, the Unstoppable Blacker Softball Apparatus defeated Ricketts with style. Look out, Fleming, better pray for rain. What? Oh, you lucky bastards.

**Pope's Corner:**

*The following was not said by me, but was actually made up by somebody else:* Everyone should take note that this year's purity test had one important omission. Thus all members of Blacker Hovse with a copy of this year's purity test should make the following addition to it:

**FIVE BONUS POINTS** for saying to Curtis Ling, "Hey, Curtis, how would you like some macadamia nuts!" and striking him in the balls as you say "nuts!"  
Bless you, children.  
Pope Maritus, M.D.  
What he said.

-PW

## Dabney: The Search for Darien: Episode 2

From the land of endless night come I

An alien from afar

Spewn forth upon your pleasant sphere

So much like you

And yet, so unlike

-Darien G. Lefkowitz, Age 18

"Could this be Darien?" asked the young freshman. Precise details on what a Darien actually looked like had been rather scarce. In the confusion following Mr. Knudsen's meeting with Dr. Everhart, all he had been able to gather was that this Darien thing was about six feet in length and shaped like a cigar. The wooden, box-like structure at his feet seemed to match the description well enough, but feelings of doubt were soon expressed by the group which had gathered around him.

"No, a Darien has rounder edges." "No, aren't Dariens a sort of greenish-purple color?" "No, Dariens smell different."

Amidst this chaos emerged a man. But not just any man. His name was Erich Delano Schneider, freshman representative and genius-at-large. He was the one person who could bring order; he could make things happen. While others engaged in idle speculation, his sharp eyes discerned a yellow sticker on one end of this "thing", and his cunning mind quickly reached the conclusion that this was the key. This would solve the mystery. He pushed aside the hoard of gibbering freshmen, positioning himself directly in front of the sticker, and immediately went to work on the first syllable. He read the first five letters to himself. "R-A-D-I-O." He recognized all five and began to piece together their individual sounds. "Rrrr-aaa-dee-ohh, Radio!", he said to himself. No problem. He continued with the next set of letters. "A-C-T-I-V-E." This was not so easy. "Aaaa-cuh-teh, no, Aaaa-chu-tuh..." It dawned on him that a thorough reading would require a great deal of time, something of which he had very little. He had to make a decision on the spot. Aware that his performance at this time would either make or break his future as a student leader, he stood up, his chin held high, and in a deep, forceful voice said "It's not Darien - let's burn it..."

-Putz

**Fleming1:** I don't use cocaine—I just like the smell of it. Humphreys and Amezcua wet their pants when six men shared a close space with them. Was Gary Holt aware of that, Linda? But does he know what a French tickler is? Sunday came and went. Bineet's flip was really acrobatic but I was crying so hard I couldn't use my instamatic. What were Huck and Slovik doing in the men's locker room at midnite Tuesday? And who was that girl I saw Daniels with? (That was no girl, it was a beer). Party tonite at 328. Free drinks for girls. For others, prices vary according to customer's attitude. Be there.

-Al 'Hoops' Fansome

P.S. If you pour a beer right you can always get good head.

P.P.S. It's 10:00 o'clock—do you know who your buddies are?

**Fleming2:** Ok. Inside World time, huh? Sigh... Well, let's do a recap.

First Week: See Upperclassmen come back from summer vacation. Oooh Ahhhh. REHAB!!!! New furniture, new nifty color schemes, new carpeting, (even in Cat-PoopLand, otherwise known as Jarita's old room), new frosh, (well, we had to take them, the MOSH made us). See frosh leave for frosh camp. See Upperclassmen steal trade appropriate furniture from frosh rooms. So began rotation.

Rotation: Meet Big Red Pre-frosh (They can't be frosh yet; someone has to answer the phones). See Upperclassmen drink. See Upperclassmen go to rotation meeting. See Upperclassmen smile benevolently as silly frosh complain about how late they stayed up the night before (11:30!), and how hard Ma 1a is. See Upperclassmen fantasize about Nelsons, and quadrupeds. See Fleming pick 40 Big Red frosh.

Room Pick: What! Again? Groan. Adam isn't going to live in 8.5? What a Su-prise. SHUFFLE! Linda doesn't want to have the Darbs looking in her window? What a Su-prise. Boose wants to live with Gino and Drazen? SURPRISE! Woolverton found a roommate and it wasn't me? SURPRISE!!

Second Week: My God, how the frosh roll in. Yeah, we do this every Monday, really. Would you like to join FLAGS? Right this whoosh, I mean way. Meet Quadruped. Meet Slurp. Meet Mr. NICE! See frosh do pushups. Excuse me sir, but this frosh would like to enquire your sexual preference. See frosh do more pushups. It's beginning to look like Christmas; a white Christmas. Remember, you can't wash the PledgeMaster. What happens when an irresistible Eras meets an immovable window?

This Week (That's Three!): We lost to page in football. Ha! Actually it's all part of our secret plot to make the boys conceited, arrogant, overbearing assholes. It's working, too! However, they can't play softball and we can. In fact [we interrupt this inside world for an ath team announcement...] IT WAS INCREDIBLE!! TUESDAY, THE GOD-AWESOME, PAVEMENT-RIPPIN', TIRE-SCORCHIN', FIRE-BELCHIN', SIX-SECOND, NITRO-BURNIN' BIG RED SOFTBALL FUNNYTEAM BLEW THE DOORS OFF OF ricketts IN AN UNBELIEVABLE 20-3 scurve-STOMP!! THE moles GOT OFF EASY, AFTER PRAYING TO THEIR RAIN GODS, BUT THE BIG RED ATHLETIC MACHINE IS OFF TO YET ANOTHER UNDEFEATED YEAR!! [we now return to our regularly scheduled Inside World]... In fact, we won't even mention the score of the Fleming-scurve game as that would be too cruel.

All Weeks: frosh are stupid. Learn the dining room rules, frosh. The Hard Way!

This week's installment of **Captain Zero!** When last we saw our trusty hero, the evil S.Y.N.D.I.C.A.T.E. (led by Dr. Bu Fu and his evil hench-sheep) had thrown him in a pool of deadly penis-sucking piranhas...

Things looked black for **Captain Zero!** Was he to be sucked dry of spooze until he was left looking like a raisin? Would the fish use rubbers? Could the Health Center supply all of the fish if they did? Would a coup d'état take over his Nazi-State?

continued on page 5

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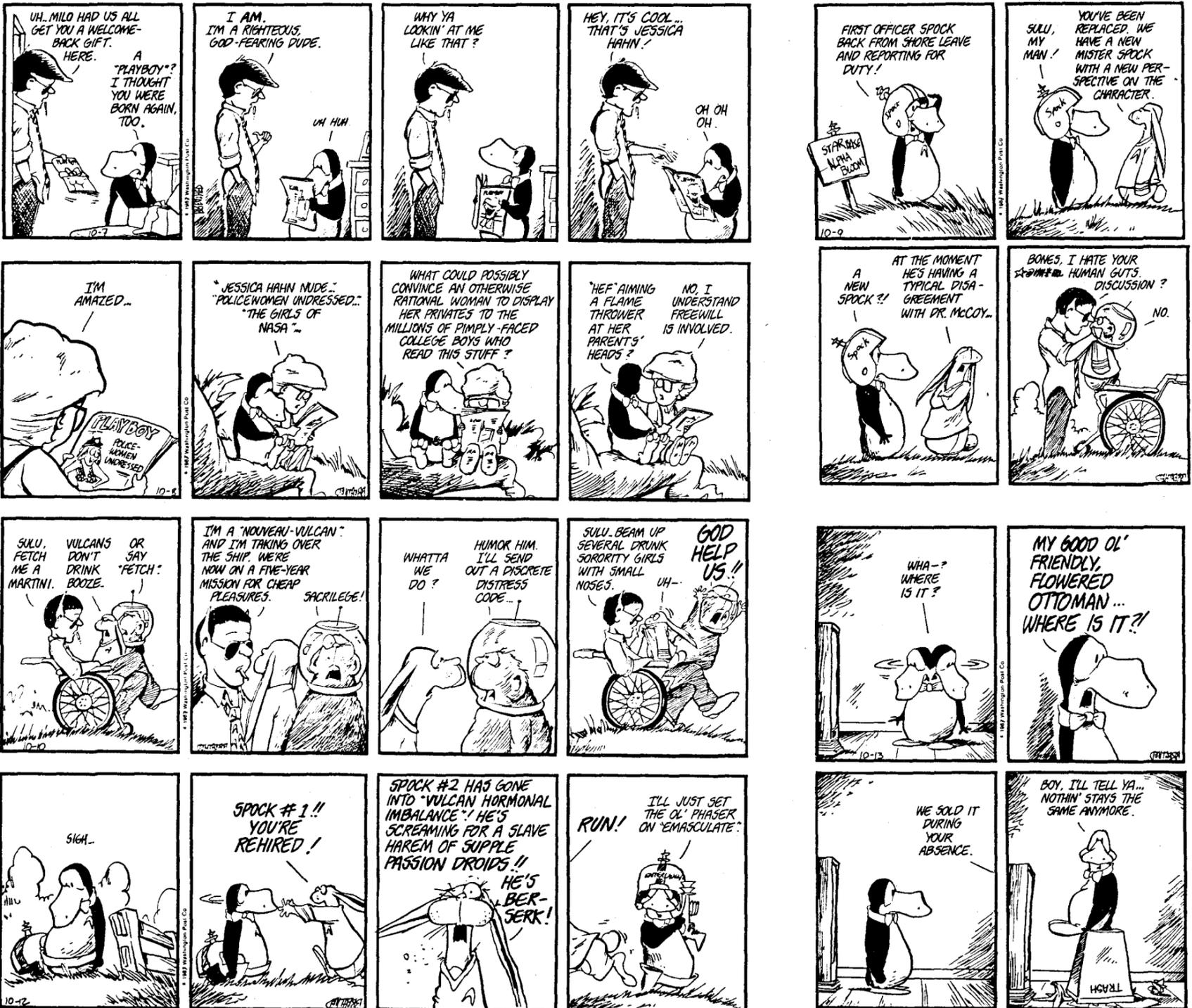
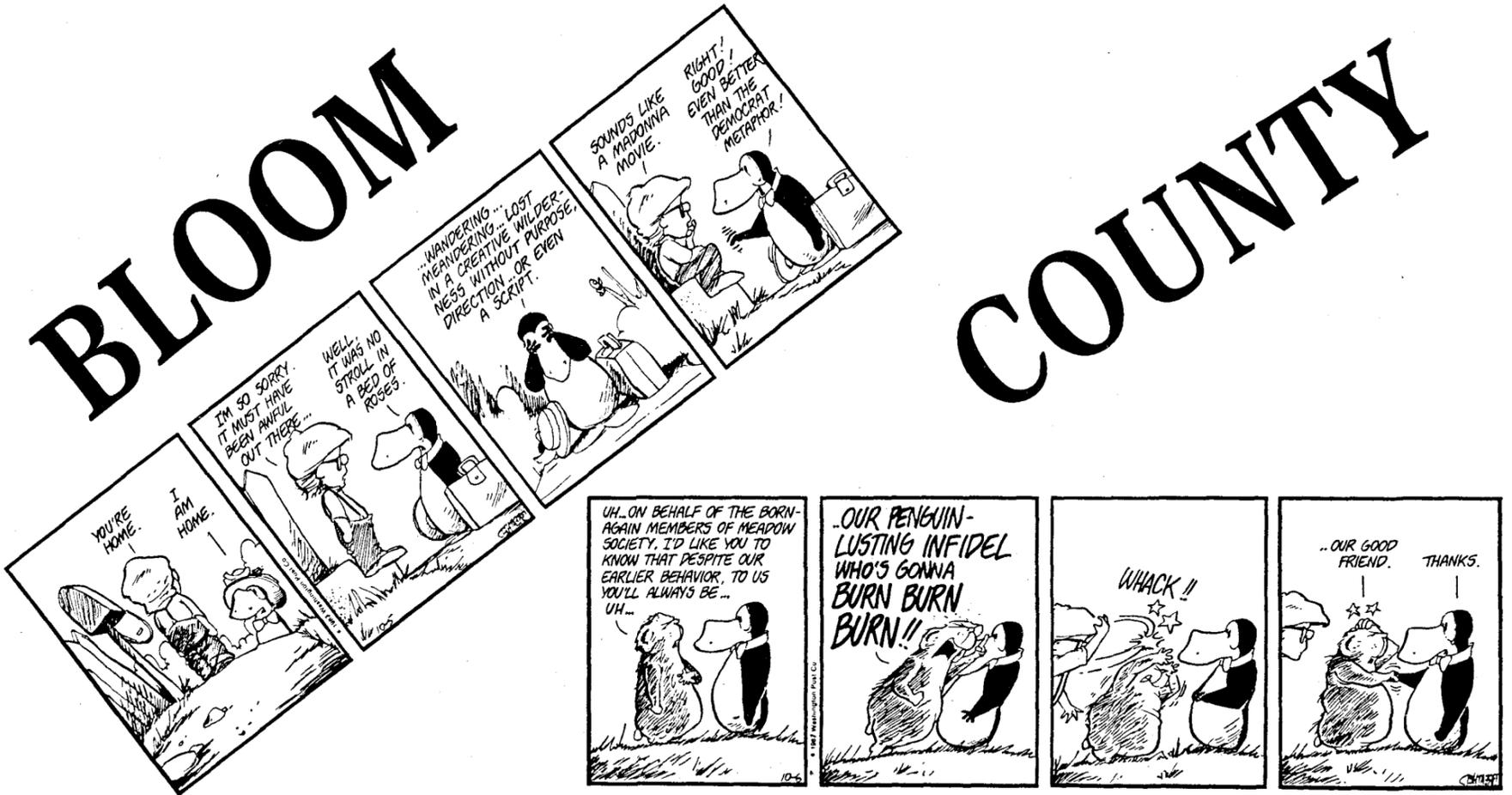
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# BLOOM

# COUNTY



continued on page 6

# by Berke Breathed

**FEATURES**

**Ask Dr. Beav.**

Dear Dr. Beav: Every couple of weeks my girlfriend goes berserk—she bitches and complains—absolutely nothing makes her happy. She craves sweets, eats everything in sight and then complains about having to lay on the bed to zip her jeans (she says she is just puffy)! Most of the time we get along fine, but these mood swings and eat-o-ramas are making me crazy too! Is something wrong or should I just get used to it?

—Puffy's Guy  
Dear Puff: At first thought you might want to get the net, however, there really could be a medical explanation. She could have PMS (premenstrual syndrome). PMS is defined as the cyclical occurrence of various signs and symptoms beginning near or after ovulation and resolving soon after the onset of a woman's period (menses). Many women have some symptoms of PMS ranging from mild to severe. Some common physical symptoms are: abdominal bloating (puffiness); headache; weight gain; sore breasts; increased appetite; craving for sweets; and acne flare-up. PMS symptoms can also be psychological such as: anxiety, depression, irritability, aggression, wide mood swings, lethargy, and sleep disorders. Some common recommended

treatments are to avoid caffeine and alcohol; small frequent meals; Vitamin B6 (no more than 100mg per day); Evening Primrose Oil, two capsules twice a day (available at health food stores); calcium and magnesium supplements. For more information on other treatments contact the Health Center.

Dear Dr. Beaver: Since twice-a-day football practice has started I have been having this weird feeling between my legs. At first I thought my jock strap was too tight so I decided to not wear one—but that didn't help. My symptoms are getting worse—I have constant itching and a red flaky rash in my crotch. I need help—

—Miserable Jock  
Dear Miserable: Since we understand that it is socially unacceptable to dig and scratch in your crotch we have some advice for you... it sounds like you have *tinea cruris* (jock itch). This is caused by a fungus that thrives in moist dark areas of the body, especially skin folds, i.e. the groin. The treatment consists of keeping the area clean, dry, and wearing loose clothing. There are several antifungal ointments that can be used in addition—they are available at the Health Center.



What's the story on venereal warts, allergies, chronic sore throats, insomnia, etc.? Ask Dr. Beaver—send your questions to: Dr. Beaver, Health Center, mail code 1-8—questions will be answered in the *Tech* and may be submitted anonymously.



**Life** (and all that kind of stuff)

by Marc Turner

Most people have probably wondered to themselves about the purpose of life and the meaning of their existence. Why am I here? What's it all for, anyway? This article will consider a mathematical proof for one proposed answer.

Consider the fact that life, the universe, and everything can be represented by a wave equation of the form:

$$\Psi(G, \theta) = \int_{Sch} [e^{i\phi(s)} / h d^4 s]$$

Now whom do you think would be most qualified to see meaning and purpose in this formula? Maybe a Caltech physics student, you suggest? I asked some and here are a few of their responses:

- "It looks like a nightmare." Suman Chakrabarti
- "I don't know. I really don't know." Dean Elzinga
- "I get it, some sort of symbolism, huh?" Jared Smith
- "Where did it come from? It looks ugly." Ray Bambha

Best guess came from resident associate John Salmon who said it was an "integral over all possible configurations of phase space." But what's the meaning?

For those of you who are still wondering, one possible answer is

to be found in the book *The Hitch-Hiker's Guide to the Galaxy*. In this anthology, the equation  $9 \times 6 = ?$  is derived for the problem: "What is the meaning of life, the universe and everything?" A vast computer named "Deep Thought" (even bigger than our beloved CIT-VAX!) finds the solution to be 42.

Already some of you math majors are shaking your heads. What the world needs is more faith, but I am prepared to offer for the first time in print (?), a proof that  $9 \times 6 = 42$ :

accept as an axiom:  $1 = 1$  (I hope you frosh are still with me)  
multiply by  $-1/1$ :  $-1/1 = -1/1$   
multiply rt side by  $-1/1$ :  
 $-1/1 = 1/1$   
take square root:  $i/1 = 1/i$   
multiply by  $i$ :  $-1 = 1$  (!!!!!!)

distributive law:  
 $9 \times 6 = 48 + 6$   
identity element:  
 $9 \times 6 = 48 + (1)6$   
substitution:  
 $9 \times 6 = 48 + (-1)6$   
conclusion:  $9 \times 6 = 42$

Of course the question now becomes "forty-two what?" But that is another subject, and grounds for a possible follow up article. If you wish to submit any possible solutions or hate mail, please direct it to "Schrödinger Fan Club" c/o Marc Turner, mail code 1-60.

**More Inside World**

from page 3

But it was not to be. Suddenly SuperFlem burst in... What the hell is going on? What is this, the Dabney inside world? Stop this Shit. WHOOOSH! and Bu-Fu was no more.  
Brian is a toad. (Which Brian? All of them.)

—NeanderFlem

P.S. Silly Haikus by Random Poets Laureate sick of 95

The Tech way of life  
It fills my Mind with Dread Thoughts  
I Will Kill Myself  
—JJ

Grim Haiku is Here  
Floundering Brains stop Thinking  
John Will Kill Himself  
—GCS

Your Haiku is Good  
But not half as good as Mine  
So why waste your time  
—Pete the Dragon

Boy do my feet hurt  
I think my shoes are too tight  
I'll go get new ones  
—A. Chen

F: Do it from behind!  
M: What? You mean like Quadrupeds?  
F: Yes! Like Dogs do it!  
—Overheard

Sunday Night at three  
Steve just did his ninety-five  
Now it's Miller time.  
—Pete the Dragon

continued on page 7



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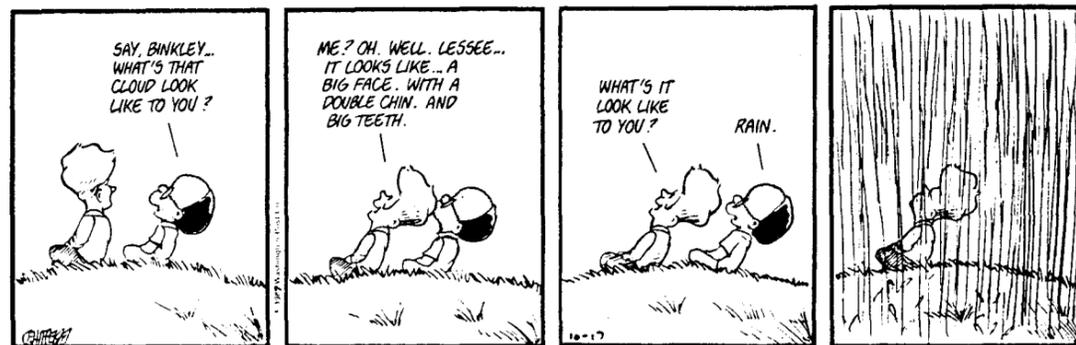
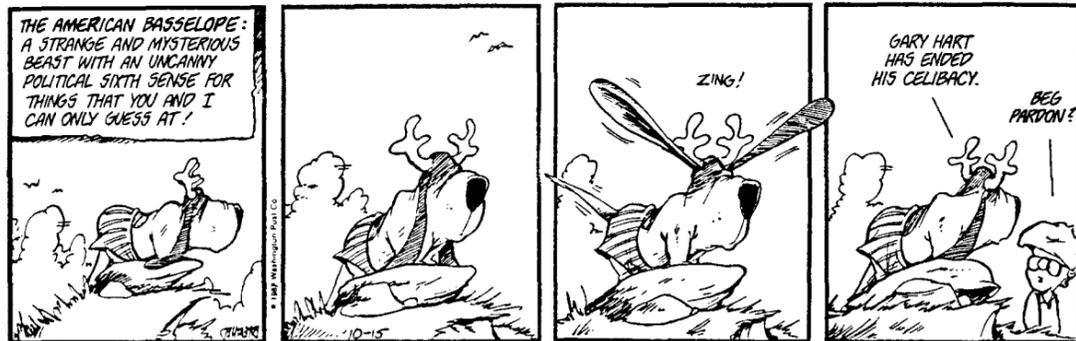
Elliot Gould  
Howard Hesseman

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Sat-Sun 1:00, 3:00, 5:00, 7:00, 9:00 pm

# More BLOOM COUNTY ENTERTAINMENT

from page 4



## Way Rad Culture!

by Pauls (Lee and CRC)

Well, hey dude, we went to this way weird scene last night. All these guys in real tight wet suits were jamming around on stage acting like they were all psyched for the North Shore. There were these mighty cute babes in funky sandals cruising around on their tippy toes. It got way rad when this dude started flinging the beach bunnies around. I mean, what a dude. I wonder if he surfs...

The Joffrey Ballet Co. is an exceptional dance company which mixes classical ballet with modern dance in a ninety-minute program well worth seeing. The evening was broken up into four acts titled *Birthday Variations*, *Untitled*, *Love Songs*, and *Cloven Kingdom*.

*Birthday Variations* was created as a birthday present from a patron of the arts in Chicago, named Becky, to her husband Dino. The prologue featured five fine examples of classical ballerinas pirouetting about to the accompaniment of a full orchestra. After hypnotizing the crowd with beautifully symmetric patterns, the male lead entered the stage. Acting as a solid base for the delicate designs, he accented the intricacies by being narcissistically macho.

The movement entitled *Untitled* mixed comic features with sexual undertones. The scene opened featuring two innocent young women combing each other's hair. To the consternation and amusement of the crowd, the women climbed to their full height of ten feet. (Having two very strong gentlemen supporting them certainly helped.) The coordination of facial expressions and body language kept the crowd amused during a series of comical events; however, it soon became apparent that the

comedy had a darker side. (feel the force Luke...) The following dance sequence involved two half-naked men emerging from under the women's skirts (Yes, it's true). The four merged together in an erotic dance which revealed the true, yet not-so-naive, nature of the women.

The third movement, titled *Love Songs*, was a medley of Aretha Franklin and Dionne Warwick songs demonstrating facets of modern romance. The themes included rejection, sorrow, conflict, intolerance, joy, and either (the writers disagree) an intensely self-confident individual or total chickenshit.

The finale, called *Cloven Kingdom*, was really cool (that's a technical term meaning "way rad"). The alternation of the dark percussion with classical music demonstrated the dual nature of the human animal. The scene opened with graceful ballet abruptly shifting into ritualistic, barbaric dances. As the scene progressed, the percussion music associated with barbarism died off. (By the way, there were four ladies who wore bicycle reflectors on their heads...Pauli and I think they represent the four forces of nature, but then again, maybe not.)

Unfortunately, the price of culture is not cheap at the Dorothy Chandler Pavilion. Tickets range from \$8 for Bob Uecker seats to \$40 for fine Founder's Circle seats. (Of course, being the grand ballet *affecianldoslsolei* [Slavic for aficionados] we forked over 120 bucks for the three of us.) So, if culture is calling you away from homework, we recommend the ballet as a fine evening of entertainment.

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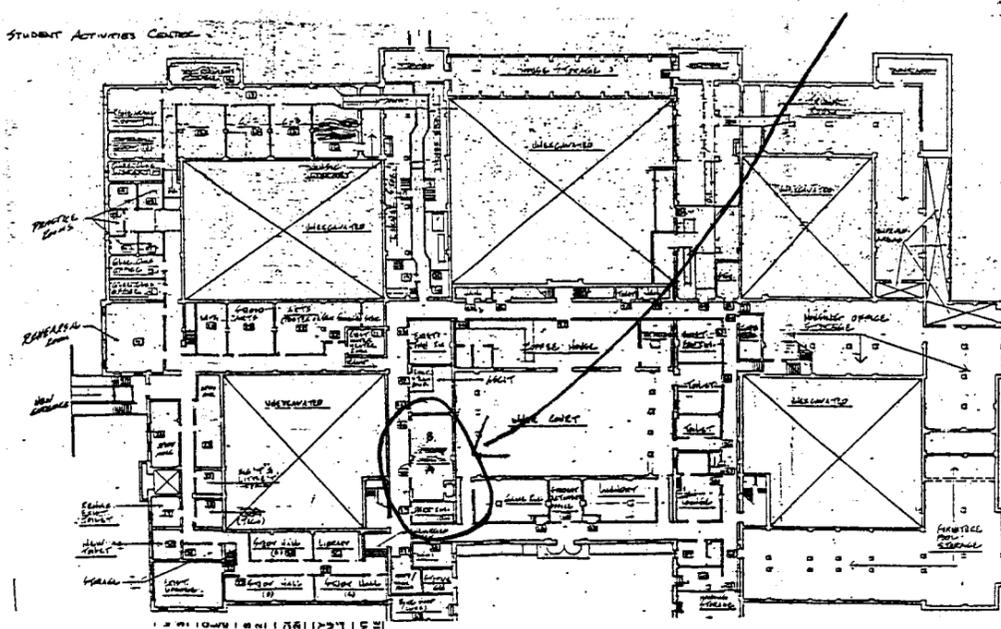
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# The All New Tech Office



## More Inside World

from page 5

**Lloyd:** Here are the results from our survey last week. 0.115% of the Caltech population answered it, giving us a vivid picture of the complex personalities which compose the living, breathing mass we call our society.

55.5% believe the food quality has increased over the summer. What percentage of the student body is composed of "Incredible Hell-Geeks"? According to our survey, the magic number is a whopping 37.7%. About half of those responding believe there are too many Asian students in Lloyd, and about half thought there were too few.

The Caltech Juggling-on-the-Ath-Lawn Society was the overwhelming favorite in the "whom would you lob a grenade at" query. Of course you would have to lob 5 to 7, depending on your skill level. There was nothing surprising in people's motive for going to the Coffeehouse. Most said they go to feel superior to Hell Geeks which, by the way, comprise 42.1% of the Coffeehouse patrons, slightly over the average. 0% said they read the comic books, so I guess we could just get rid of them.

Although 22% of the campus enjoys rap, have fewer than four shirts, and are afflicted with an annoying shoulder shrug, 0% of the populace are John Haba.

50% of the males responding glom women 0 times daily, 33% glom 1-3 times a day, and 17% glom 4-10 times a day. Apparently men from other campuses come in to help glom the 66% of Caltech women who are glommed over 10 times per day.

*Jethro, Skeeter and Enos*

**Page:** Dear Fleming Ath Nurlballs (esp. Peter "Dicklet" Ying),

Gez, guys, what happened? We know your really good athletes graduated last year, but we didn't realize exactly how bad a shape you were in. Maybe "our superior" didn't get to play enough.

Nothing interesting has happened over here since Larry's romantic rendezvous at the beach last Thursday. The most exciting thing that happened last weekend was watching the Evil Dead on the VCR. We're throwing an awesome Autumn Soiree in the Lloyd courtyard on Saturday. We hear you're going out with Jim Bob's ex-girlfriend. Bring her along. Just try not to tire your wrist out too early in the evening, and don't get the pages stuck together. The Frosh and Sophs are going to be ritually washing each other until the mystery last Initiation Chairman shows his wet head. (that could be a while.) This is getting serious. The Frosh don't know how to shower, and the Sophs don't know how to train 'em. Could be worse though. Maybe things will pick up after the Greased Frosh races on Sunday. I was looking forward this weekend to a crushing defeat of our Discobolus challenger. Too bad Lloyd only challenged in wimp sports.

Meanwhile the amazing Page Interhouse Softball team continues its unbroken string of negative victories. But it's early yet.

I really enjoyed your last letter and we're looking forward to hearing from you again.

Stay tuned for:  
The Page Inside World Multiple Choice Midterm  
Predictions of the future of Page House  
Interhouse Ideas

*—more superior than than you*

**Ricketts:** HAPPY BIRTHDAY, COOKIE! Everybody should wish Cookie a happy birthday. He turns 21 on Sunday.

Frosh and sophomores are wimps! The Excomm brakedrum ringing took place on Tuesday night. It lasted for over two minutes before those pathetic underclassmen could stop it. After a grueling three hour pile, with seven casualties among the lower classes, the freshmen finally got possession of the brakedrum.

The winner in the Ricketts Hovse-Inside World-Give-David H. Lipin-A-Nickname Poll is ... APATHY! After two weeks, a total of five votes were received. To make matters worse, they were all different. To rectify this, the Inside World writers were given three votes each. First runner up (a drum role please) is Wack-A-Doo Dave (yea, clap, etc.). And the winner is (the envelope please) Diamond David Lee (yea, clap the crowd goes wild). Remember, whenever referring to our illustrious leader, you may only use one of these names.

With cries of "Loops, Loops!!" Scurves everywhere descended on Ricketts Lounge for our first hovse meeting of the year. Ricketts Hovse appointed two Super Ombudsmen for Dean Jeanne to play with. She was slightly upset because she wanted three people, but Cookie and Shroom will have to do. We also unanimously elected Jason as our continuing food service representative, no one bitches like Jason. The social team finally managed not to plan any stupid social events, they didn't plan anything at all (and that makes Thao mad).

Noxious fumes force Scurves out of doors. The Ricketts Hovse lounge has been declared a government testing ground for chemical weapons. This horrid state of affairs continued throughout the week, causing Scurves to eat like Blacker Moles (thank you, George).

Other Naughty Bits: Johnson the mad rat killer has struck again. Late Thursday night, while scurrying across the south house kitchens, pounced on some unrecognizable animal and killed it. He was unable to dispose of it quickly enough, however, so enjoy your delicious Friday dinner. Don't threaten the Inside World writers, it doesn't work. Charles Budnoid experienced the joys of manhood yesterday. He finally discovered what his right hand is for (thanks, Plu). Evan, didn't Lisa L. tell you to tell her that you told her so? Su-Lin.  
*—The Lil' Cook-Man and the Great Neck Strangler*

**Ruddock:** Hello, we are VanEric Stein and Wayne Lukens, and we are bringing you this week's Inside World. Today's opener is "Top Ten Members of Other Houses":

- 10 Rich Arietta
- 9 Sean Hillyard
- 8 Adam Slovik
- 7 Seth Jelen
- 6 Andre Ohanissian
- 5 Keith Owens
- 4 Jeff Hartt
- 3 Pete Hughes
- 2 Jeff "Lay off the goalie" Flint
- 1 John "Big T" Haba

Well isn't that special!

Welcome to Ruddock, new students and new social members: Greg James, Rhonda Stroud, Alan Kwentus, and James Ibbetson! Not much is going on around Ruddock, so we'll rag on Lloyd House instead. Brian Patterson says, "Frosh are wimps!" Maybe if you guys didn't stand out in the cold all wet, you wouldn't be sick all the time. Finally, we'd just like to say, "Way to keep your president from being ponded." We guess this makes up for you running away last time, Haba.

By the way, it feels soooooo good to be a senior. We've got nice, light workloads; how about you, Joe?

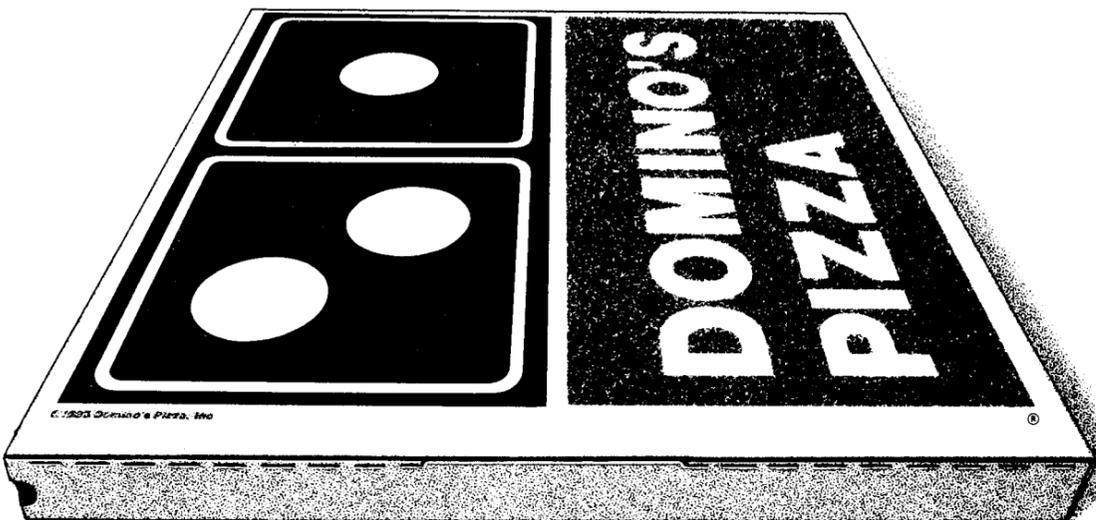
This week's events are Thursday night Happy Hour at 5:00pm in the lounge followed by some gratuitous sex and violence in the 4.5 Cinemplex. Also, don't miss the Lindbergh [sic] Baby Memorial Party with Page and Lloyd on Saturday night in Lloyd courtyard. Finally, come play or cheer for the Ruddock Softball Machine, and play Ultimate at 1:00pm Sunday on the Athletic Field.

Rumor of the week: Dave traded Cynthia to Nathan for Margi. (Almost sounds like the NFL draft, don't it. Here's to scab football.)

Andre quote of the week: "Let's go party hopping on Saturday night and check out which party has all the hot babes!" (Obviously a new student.)

So long for now. See you next week at the same bat place, same bat channel.  
*—Bets the Frosh*

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## WHAT GOES ON

from page 11

**Advance Your Swordplay Skills**

The Caltech Medieval/Renaissance Society is holding fighting practice on Sundays at 2pm on the lawn outside Winnett Student Center. Would you like to learn the techniques of medieval armored combat? Come join us! For more information, call Leif (213) 644-7566, or Amy (818) 794-2612.

**Bother Tom**

The *Totem* is once again hunting for pieces of fiction, poetry, and other creative works that are not derogatory to reinforced concrete. The editor, Tom Tromeo, promises authors everlasting, world-wide fame, a chance at the Nobel prize in literature, and maybe even some toast (unbattered). If you would like to aid Tom in his literary pursuits, bother him at 1-59 (Ricketts).

**Off With Its Head!**

After a long, hard week, wouldn't you like to spend your Friday night working out your frustration by killing something? At least vicariously? The Caltech Gamers get together on Fridays at 8:00 in Clubroom 1 of Winnett Center, and do just that. Let's face it, in any game, from checkers to Rogue, the object is to bash your opponent into the ground, whether your opponent is a computer or your best friend (sometimes indistinguishable). Stop by and join in the fun. The mainstay of Fridays is a fantasy role-playing game developed here over the years, relatively easy to learn. People also use Friday night to make plans for private game sessions of just about anything that can be played by one or more consenting adults. Drop by any time. Beginners welcome, and not just as orc fodder.

**Caltech Bridge Club**

The Caltech Bridge Club meets every Monday at 7:00 pm in the Red Door Cafe. Players of all standards are welcome and it is not necessary to bring a partner. We play Duplicate Bridge and Master Points are awarded every week. If you have not played Duplicate before, come to the cafe at 6:45 for a brief description and tips on how to play. So, if you enjoy playing, come on out Monday for an enjoyable evening of bridge.

**Introduction to 4th Dimension**

The MacValley Users Group announces that its October general meeting will be held Tuesday, October 20 at 7:30 pm in the cafeteria of Burbank High School at Burbank Blvd. and Third St. in Burbank. Guy Kawasaki of Acius will introduce 4th Dimension. For further information please contact Ruth Stever, (818) 848-1277, or write MacValley Users Group, P.O. Box 4297, Burbank, CA 91503.

**5K For 5 Acres**

The first annual Five Acres' 5K Doo Dah Run will be held at 8 am on November 29, preceding Pasadena's famous DooDah Parade. The race will start at Garfield and Colorado and conclude at 9:30 am with an "Outrageous" Awards Ceremony at Memorial Park, at Raymond and Walnut. It promises to be a party for runners and spectators alike, entertainment every half-mile; jazz bands, marching bands, jugglers and waiters running ala DooDah.

Why? Runners will be contributing to Five Acres, the Boys and Girls' Aid Society of Los Angeles, which has been helping abused children for the past 100 years. For more information about running, call (213) 975-KRUN.

**Central America Studies Group**

Much of the discussion surrounding the nations and peoples of Central America is so clouded by rhetoric and ideology that it is difficult to discern what is actually happening there. By bringing speakers to campus who have experience in Central America, we hope to offer an alternative source of information on past and current events in the region. In addition, if you are interested in working with refugees, the sanctuary movement, political action, liberation theology, or any of a number of other topics, we can guide you to the proper organization. If you are interested, call Cindy (x6542) or Marty (x6576).

**The Lettermen In Concert**

The Lettermen, famous for many years for their smooth vocal harmonies, will appear at the La Mirada Civic Theatre at 8pm on Friday, October 30. Best known for their hits "Put Your Head On My Shoulder," "Theme from A Summer Place," "Shangri La," and "Can't Take My Eyes Off Of You," The Lettermen have entertained audiences around the world for enough years that they ought to be really old by now. Anyway, tickets are \$15.50 and \$14.50. Call (213) 944-9801 for ticket orders.

**Scriptorium, Anyone?**

Would you like to learn the techniques of medieval calligraphy and manuscript illumination? The Caltech Medieval/Renaissance Society, in conjunction with the Society for Creative Anachronism, is holding a scriptorium workshop on Sunday, Oct. 18, from noon until whenever, in Clubroom 1, Winnett Student Center. For more information, call Amy (794-2612).

**Environmental Studies Group**

Advances in science and technology have contributed to better standards of living for much of the increasing world population, but those same advances have also precipitated many crises in fragile and poorly-understood ecosystems. The efforts of this group will be focussed on improving how the Caltech community interacts with the local environment, but we also plan to educate ourselves and other people on national and global ecological issues. The group is still in its formative stages, so input on problems to be addressed and actions to be taken is very welcome. For more information, contact Scott Ross (x6553, 127-72) or Claudia Barner (x6576, 127-72).

**Women Faculty Seminar Series**

Throughout the year the Organization for Women at Caltech will be sponsoring seminars by our women faculty about their research. All persons are welcome to attend. October's speaker is Frances Arnold, assistant professor of chemical engineering. Professor Arnold will tell us about "Protein Design for a Water-Free Environment." Arnold, who comes to Caltech from Berkeley via Minnesota, is combining her knowledge of engineering and molecular biology in a rather fascinating way. 151 Braun, 12 noon, October 19.

**\$\$ For Money, Chips For Free**

A coin auction will highlight the October 21 meeting of the Caltech-JPL Numismatic Society. There will be many bargains among the choice numismatic material offered at the sale. Enthusiastic bidders seeking to enhance their collections will be able to consider items such as pennies, silver dollars and ancient to modern foreign coins.

Drawings for door prizes will be included in the activities and refreshments will be available. The club meets the third Wednesday of each month at 7:30 pm in room 168 of the Church Lab building on campus. All Caltech and JPL personnel along with their families are most welcome to attend.

**Frosh Camp Lost & Found**

The lost items found at Freshman Camp on Catalina Island include: a set of keys; a blue-and-white beach umbrella; an orange-and-white HULA HOOP; lots of clothing; towels; a black frisbee; and a great many other things. . . .

Please: if you have misplaced your belongings, come to the Office of the Dean of Students, Room #102 of Parsons-Gates, to claim them.

**Student Heart Research**

The American Heart Association is offering an undergraduate research training program to encourage and introduce gifted students from all disciplines to consider careers in cardiovascular research. In the program, students are assigned to leading research laboratories in California for a ten-week period during the summer to work under the direct supervision of experienced scientists. Each student will receive a grant of \$1,500 for this period.

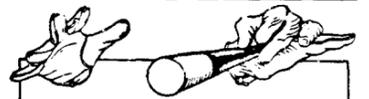
Interested students should request application from the following address by December 15:

Antone F. Salel, M.D., Chairman  
Student Research Committee  
A.H.A., California Affiliate  
805 Burlway Road  
Burlingame, CA 94010-1795  
or phone (415) 342-5522.

**Mali Art**

"Modern Art and Old Adobe Styles of Mali, West Africa." A Slide show will be given by Jim Barry on the art and culture of Mali. The talk will be on Wednesday, 21 October, 8pm, in 24 Beckman Labs. The talk is free and all are welcome.

The talk is sponsored by the Caltech Y.

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EVENTFUL WEEK  
AT CALTECH

An exciting week of events at Caltech begins Sunday, October 18 with the **Boston Chamber Music Society** at 3:30 P.M. in Beckman Auditorium. This Coleman Chamber Concert includes Beethoven's String Trio in C minor, Op. 9; Martinu's Duo for Violin and Cello; and Schubert's Quintet in C Major. A limited number of free tickets and tickets at \$6.00 each are available to CIT students on a first-come, first-served basis. Tickets are regularly priced at \$17.50-15.00-12.50-10.00.

**Mongolian Music and Dance** comes to Beckman Auditorium on Tuesday, October 20 at 8 P.M. Exotic dances and colorful costumes capture the essence of this remote region's folk music and dance. This is the first troupe from the Mongolian People's Republic ever to tour the United States. CIT student tickets are priced at \$8.75-7.50-6.25; CIT faculty and staff tickets are \$15.50-13.00-10.50. CIT rush tickets for \$6.00 and CIT faculty and staff TECHTIX—same as regular CIT student discount prices—will go on sale Tuesday, October 20 at noon at the Ticket Office.

**Ted Turner**, Chairman of the Board and President of the Turner Broadcasting System, will give a free lecture Wednesday, October 21 at 8 P.M. in Beckman Auditorium. This is the first event in the President's Lecture Series at the California Institute of Technology. Even though this lecture is free, tickets are required and can be obtained through the MOSH or the Graduate Office.

Next weekend brings the **Berkeley Shakespeare Festival** back to Caltech with their production of "Henry V." Beginning at 8 P.M. in Beckman Auditorium, Shakespeare's tale of war, politics and love features one of the West Coast's finest Shakespeare ensembles. CIT student tickets are \$8.75-7.50-6.25. CIT faculty and staff tickets are \$15.50-13.00-10.50. CIT student rush tickets for \$6.00 and CIT faculty and staff TECHTIX—same as regular CIT student discount prices—will go on sale Friday, October 23 at noon at the Ticket Office. The Berkeley Shakespeare Festival will also hold a workshop on Friday, October 23 in Dabney Lounge beginning at 2 P.M. This activity is open to anyone who would like to participate.

If you like **Irish folk music**, you won't want to miss **The Green Fields of America** on Saturday, October 24 at 8 P.M. in Beckman Auditorium. Led by the inimitable Mick Moloney, this group performs traditional Irish-American music that expresses the experience of the Irish in America. CIT student tickets are \$7.50-6.25-5.00. CIT faculty and staff tickets are \$13.00-10.50-8.00. CIT student rush tickets for \$6.00 and CIT faculty and staff TECHTIX—same as regular CIT student discount prices—will go on sale Friday, October 23 at noon at the Ticket Office.

Also beginning next weekend is the **T.A.C.I.T. production of "A Life in the Theatre"** in Ramo Auditorium. David Mamet's play will be performed Friday and Saturday, October 23 and 24 at 8 P.M.; Sunday, October 25 at 7 P.M.; Friday and Saturday, October 30 and 31 at 8 P.M.; and Sunday, November 1 at 2 P.M. Student tickets are priced at \$4.00; regular tickets are \$6.00.

We hope to see you at these events. The Caltech Ticket Office is located just north of the Beckman Auditorium parking lot. For information on all Caltech Public Events, call x4652.



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**SPORTS****Beavers Terrorize SF, Place Sixth in Water Polo Tourney**

by Skip Schotte

Last weekend the Caltech Battlin' Beaver Water Polo Team took its first road trip in over six years, visiting San Francisco. Although the team ended the trip with a 2-3 record, it was a very successful journey.

The trip started on a typical note as the team left Caltech very early Friday morning. The caravan of cars, led by the fearless Coach Dodd, all turned right on California, except for the Brunomobile which turned left. This demonstrates again the right-left discrimination problem Caltech has in and out of the water. Two hours later, the team was reunited at the McDonald's in Buttonwillow. After arriving at the Cal Maritime campus at 2 p.m., the team was very surprised to learn that they were at Caltech's sister school. As the athletic director told them, Cal Maritime students take all the same classes: mechanical engineering, maritime engineering, and business administration. Luckily, the Beavers left for their first game before anyone insulted the host's obviously stupid impression of Caltech.

The first game was against Dominican College. The team arrived there two hours early, allowing surfers Chris Edgington and Dave Geraghty to be taunted by cheers of "Wipeout" from the eight-year-olds in the pool. By game time, the sun had set and the totally inadequate lighting had been turned on. Even then, frosh Barry Stipe wore his dark goggles to impress the women both in and out of the water. After four quarters with the referee who tried to shovel away all his bad calls, Caltech emerged victorious.

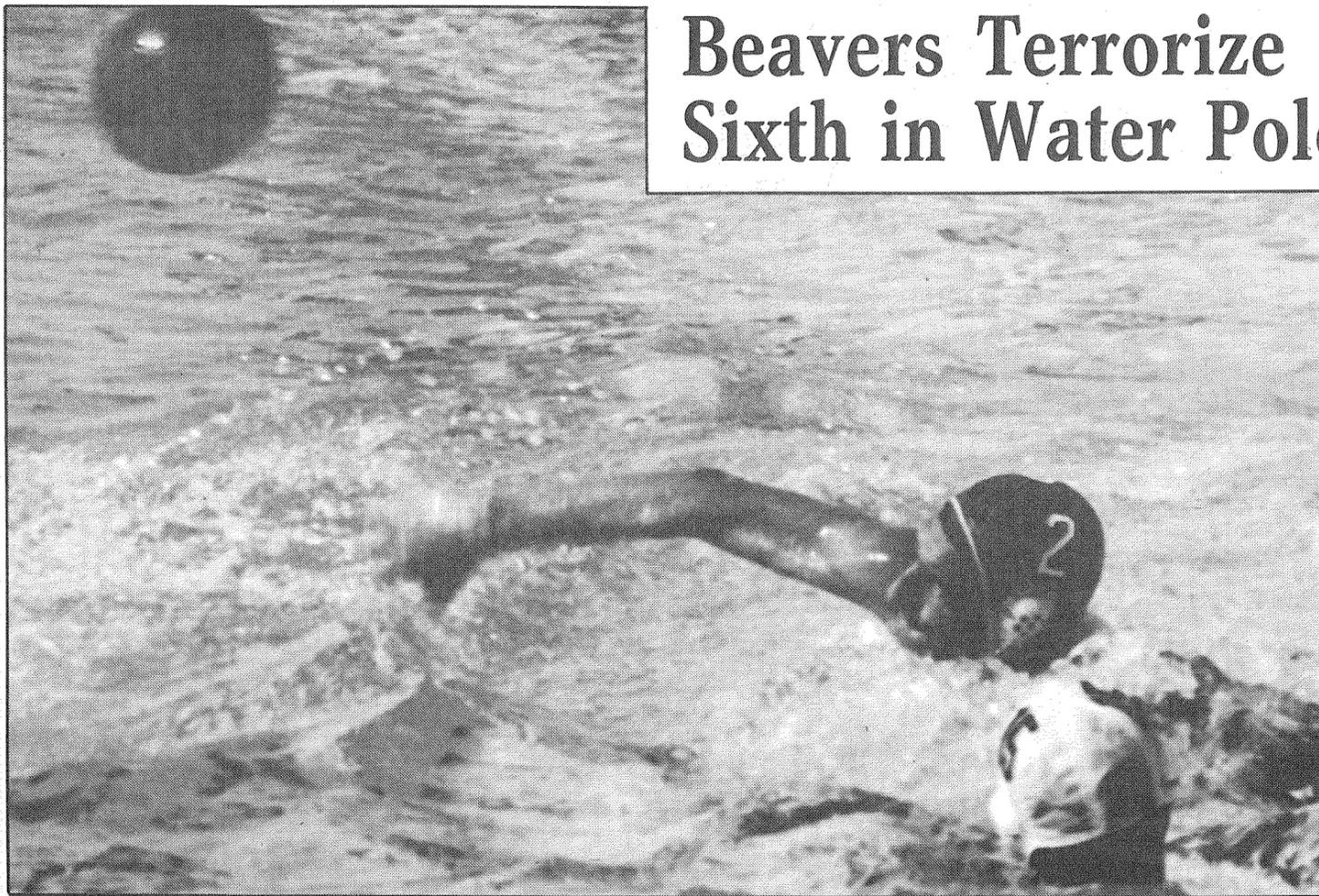
Saturday morning was the beginning of the Cal Maritime Tournament, and Caltech began the tournament by playing the hosts. In a game marked by the general inability to shoot at the goal, Caltech lost by a 13-7 score. In this game, Bruno scored six of the teams seven goals, thus showing the Beavers that the offense needed some work before the Redlands game.

The next game was against conference opponent Redlands. After falling behind early, the team recovered nicely led by the hot hand of Devin Leonard who led the team with four goals. Caltech emerged victorious, thus gaining a spot in the 4th-6th place round.

UC Davis' B team was to provide the afternoon's entertainment. The Caltech team went in as great underdogs, but in the middle of the third quarter, the score was tied at 5-5. This was mostly due to the strong Caltech defense and the shooting of Clark Highstrete. However, the Davis talent and the Caltech fatigue shown through in the final six minutes allowing Davis to win that game.

Sunday morning, the Battlin' Beaver arrived bright and early for their final game, against another conference opponent, Whittier. Although a close game throughout, the Caltech team could not summon the extra reserves necessary to achieve a victory, and in the process took sixth place in the nine team tournament.

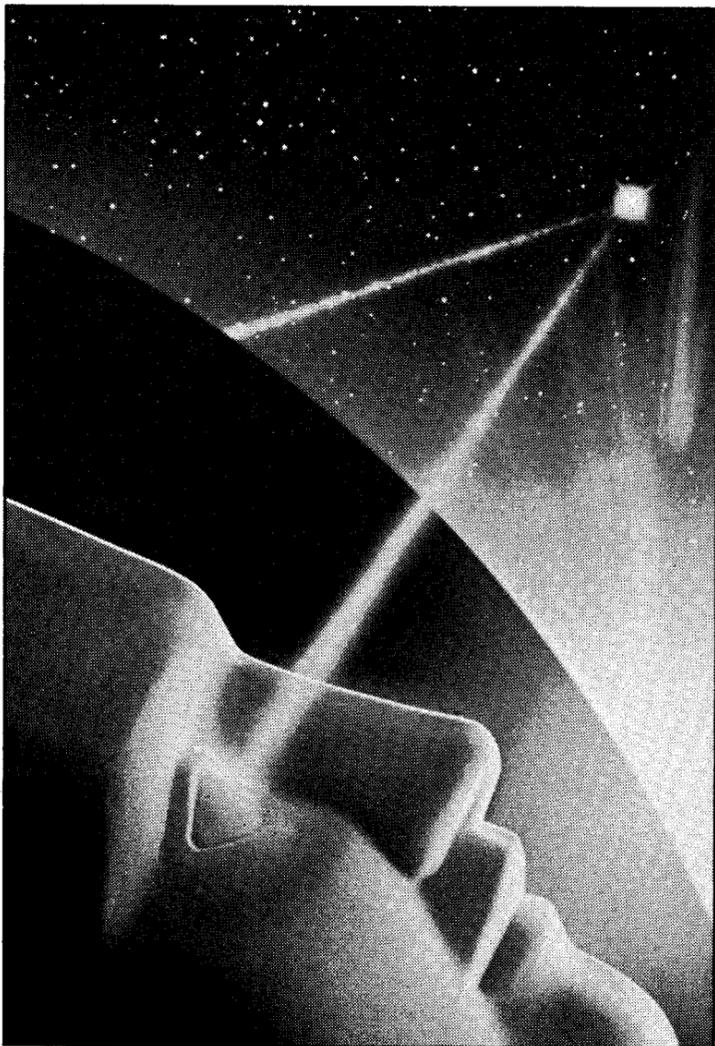
The All-Tournament selections did include Bruno from the Caltech squad. As all agreed, the weekend was very enjoyable. Special thanks go to Coach Dodd for working out

**POLO continued on page 10**

Battlin' Beaver Bruno (2) Gives the Ball plenty of force with a grimace in the Alumni game back on October third.

photo by Mark Chamness

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the limits of  
technology,  
now start  
breaking them.**



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**LOGICON**

SPORTS

# Runners Off on Right Foot To Fine Year, New Records

by Mara Thoner

Caltech is experiencing tremendous interest in cross country with the current men's squad of over 40 runners, and even more remarkably, the women's team is comprised of 14 athletes.

Just exactly what is causing this explosion, or infusion of new blood, if you will, is a total mystery. The rumor going around campus, however, is that there is an unmentionable and highly controversial coach (sometimes referred to as a "loose cannon") who is controlling a slush fund in a secret athletic department account.

The accusations concerning no interest loans to runners and Corvettes for the top seven are totally lacking in substantiation. The results of the ongoing NCAA investigation will be reported in future editions of *the Tech*.

### The First Meet...

After only 4 days of preseason practice, on September 19th the men's teams (all 3 of them) travelled to Santiago Oaks Regional Park in Orange for the Chapman College Invitational. In a field of 19 teams, Caltech's "A-Team" finished 7th ahead of SCIAC opponents Redlands, Whittier, and LaVerne, as well as NCAA Division I teams such as Loyola Marymount and Pepperdine.

Only one woman, Ami Choksi, was ready to race that weekend and she managed an improvement over last year by clocking 30:24.

Notable performances were turned in by senior John Gehring, who finished 13th overall in 24:12 on a hot and hilly 4-mile course over sandy horse trails. Chris Campo, a talented freshman, was next at 25:55, while freshman Scott Kister was less than a minute behind in 26:54. Rounding out the top 5 scoring runners were sophomore Ron Rogge at 27:43 and senior Joe Shiang in 28:02.

### Home, sweet home

The following week Caltech hosted last year's top three conference teams at the "notorious" Lower Arroyo Park. One particular conference coach just couldn't seem to find anything good to say about our classic and challenging 5.1-mile home course. Oh well, what would the home field advantage be without a little controversy?

Either Caltech is making progress or these other teams are slipping because last year all three of them skunked our men 15-50. With a strong effort, John Gehring led the charge by blazing to a new school COURSE RECORD of 28:46. This was 51 seconds faster than his previous record established in 1986, and it allowed him to crack into the top 5 of both Oxy and Pomona while finishing ahead of Redlands' #1 man. Gehring placed 6th overall.

Chris Campos was next in line with a 21st place finish of 31:32. Joe Shiang moved up to 3rd man in 32:37 with junior Alex "The Greek God" Athanasopoulos running 4th and clocking 32:56 in his first race of the season. Rounding out the top 7 were Mark Lyttle, just a tick of the clock behind Alex (32:57), Ron Rogge (33:39), and freshman Mike Pottenger (33:41).

Pomona-Pitzer defeated Oxy 27-30, establishing itself as the team to beat in '87, with Spencer Allen of P-P speeding to a new

COURSE RECORD of 27:58.

While Oxy beat Caltech 17-46 and Pomona put it to us 18-45, the "Battling Beavers" just missed upsetting Redlands, as we lost 27-30 in a heartbreaker. This outcome might have been reversed had Scott Kister not imitated a snowball in an avalanche as he rolled down a hill in Catalina during Orientation, or if Huck Seed hadn't gotten off course after leading the race during the first mile. Both of these talented freshmen can be the difference between winning or losing a close race, according to Coach Jim O'Brien, and in the future they have the potential to be All-Conference in our league.

In the women's competition, Oxy flexed some heavy duty muscles by sweeping the top 7 spots. Another course record was established by Michelle Trimble of Occidental College as she ran away from everyone in 18:42.

While Oxy swept Caltech 15-50, we were considerably closer to Pomona as they defeated us 22-35. Since Redlands was unable to field a complete team, Caltech won by forfeit.

Leading the list of superb performances for CIT was junior Bibi Jentoft-Nilsen who covered the 5-kilometers in 22:45. This time indicates a considerable amount of summer conditioning as Bibi improved on her best previous clocking on this course by 3:23.

Close behind was sophomore Vicki Lane, who stopped the clock in 23:05, an improvement of 1:20. The coach has Vicki on a unique training schedule designed to protect her fragile knees. During the week she runs 3 days and swims 4 days in an attempt to keep her healthy throughout the season.

Freshman Liz Warner ran impressively in 24:23 and will only get better as her aerobic fitness increases. Coach O'Brien is very impressed with Liz's competitive spirit and feels that she will eventually emerge as a team leader.

Completing the top 7 for Caltech are junior Carmen Shepard (26:01), freshman Susan Schima (26:28), sophomore Christina Garden (26:39), and sophomore Ami Choksi (27:15).

Hats off to all the student volunteers who assisted with this meet!

### Beating the heat

Finally, our most recent meet was conducted a week ago Saturday, again at Lower Arroyo Park, in the midst of the record-breaking heat wave. If you haven't gone out running in 104+ temperatures, you just haven't lived, died, or gone nuts (choose one). Survival was definitely the name of the game.

Despite the horrendous conditions, the men defeated Pepperdine (21-40), Christ College (16-47), Citrus College (18-45), and Southern California College (forfeit).

Unfortunately, we lost to Master's College (26-29) in a squeaker that wasn't decided until the last half-mile. The good news is that two weeks ago Master's defeated us by 105 points at the Chapman Invite and now we are breathing heavy down their necks.

John Gehring worked his way up from 10th place at Mile 1 to 3rd by the finish in a tough effort and an intelligent race to stop the clock in 30:25. Scott Kister was close behind John as he turned in his best race to date, finishing 5th in 31:38.

Chris Campo (32:27), Alex Athanasopoulos (33:24), and Mark Lyttle (34:52) closed out the top 5 scoring runners. Joe Shiang ran 35:11 and John Bowers clocked 36:06 to displace runners in the top 5 of other teams.

The women's team defeated SCC, Christ College, and Citrus all by forfeit while losing to Pepperdine (21-35) and Master's (22-33). Again, Bibi Jentoft-Nilsen led the team with a 9th place finish in 23:49 as Liz Warner was less than one minute back in 24:37.

Moving up to 3rd on the team was Susan Schima in 26:10, an 18-second improvement over last week. Carmen Shepard ran very well in the heat, clocking 26:53 while junior transfer Betina Pavri cracked the top 5 in her first race. Ami Choksi (28:18) and junior transfer Selena Forman (29:56) closed out the scoring for Caltech.

Both the men's and women's teams are currently at 4 wins and 4 losses as we prepare for this week's SCIAC confrontation with Whittier and Redlands in Yorba Linda.

Any student support would be greatly appreciated as we head into this meet without some of our seniors due to the Graduate Record Exam.

*Never Again* will I procrastinate and write up three meets in one article. All right, sports fans, go give your eyes a break as I intend to retire this pen for good. Enough applause already!

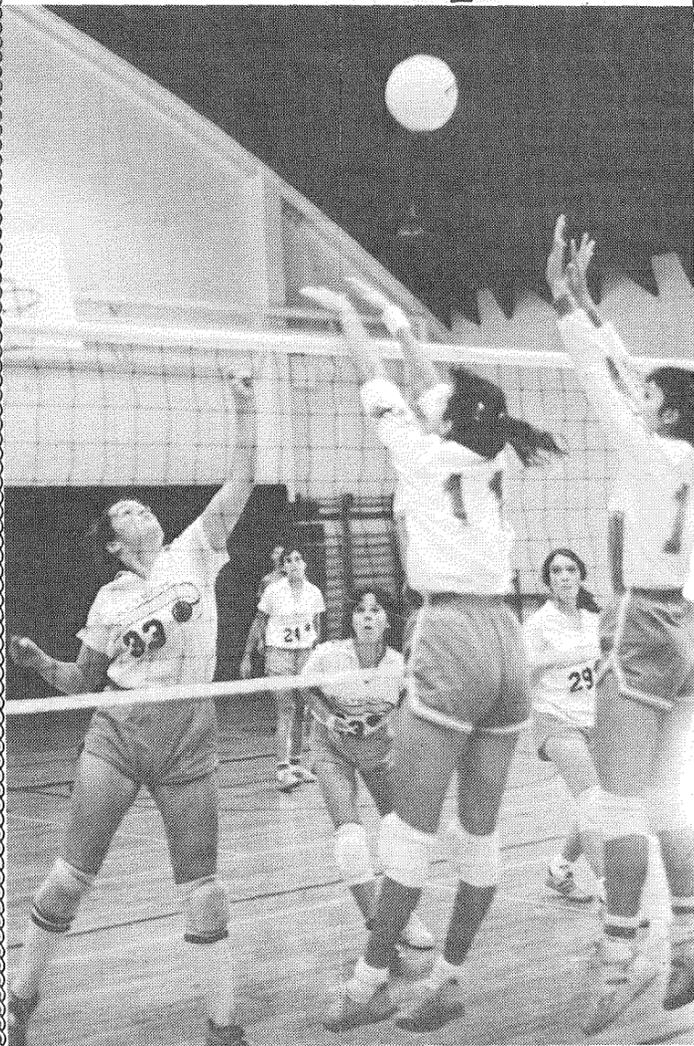
## POLO

from page 9

the details and also for enduring the rowdiness shown by fifteen Techers away from school.

Wednesday afternoon Caltech battled the invaders from Chaminade in Hawaii. In a very

# Volleyball!

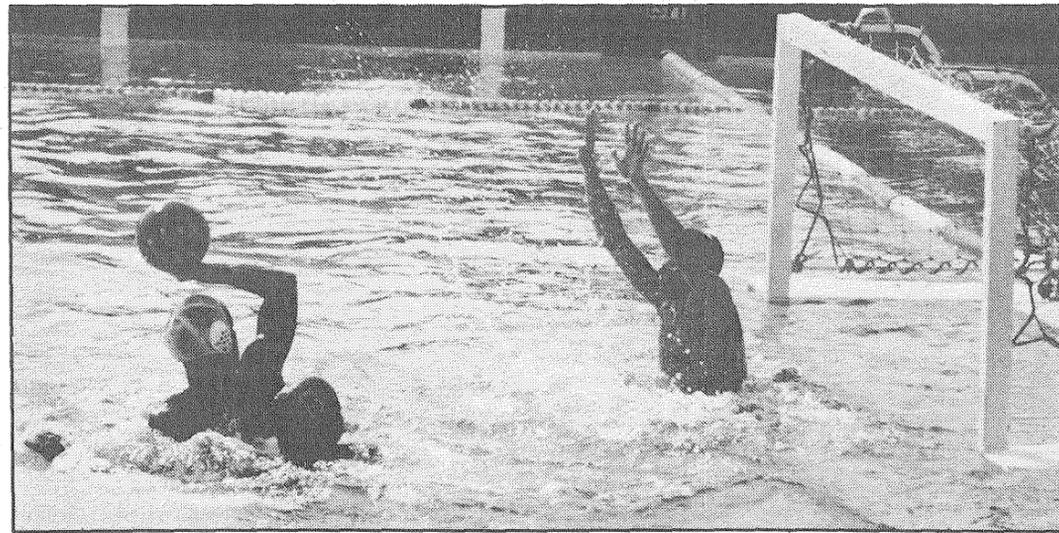


Lynn Hildemann (33) keeps her sight on the ball as her teammates anticipate the next shot against Pacific Christian last Saturday. photo by Teri Engelhard

physical first quarter, the score was tied at 3-3. The next quarter saw the emergence of the disappearing Caltech defense, in which the Beavers were outscored 7-3. The second half thus started with a 10-6 score. The defense reappeared this quarter and the score was evened up at 10-10. But alas, by the end of the quarter, Caltech was again trailing by two goals. In the very rough and tumble fourth quarter, in which the refs went blind and

called no fouls, the Beavers lost the game. This weekend Chaminade plays the Beavers again in the Caltech Classic Tournament.

The Caltech Classic consists of five games for each of the teams. Caltech plays at 8:00AM, 1:15PM, and 5:15PM on Saturday and at 10AM and 4PM on Sunday. As these should be some of the most competitive home games of the year, please come out and cheer on the team.



Just Splashing Around in San Francisco. Devin Leonard goes for a goal. photo by Mark Chamness

## WEEKLY SPORTS CALENDAR

Day	Date	Time	Sport	Opponent	Location
Fri.	10-16	3:00 pm	Soccer (JV)	Claremont-Mudd	Claremont-Mudd
Sat.	10-17	8:00 am	Water Polo	Caltech Classic	Caltech
Sat.	10-17	10:00 am	Cross Country	CSSB, Pepperdine & Whittier	Cal State San Berdo.
Sat.	10-17	10:00 am	Soccer	Occidental	Caltech
Sat.	10-17	1:30 pm	Football	San Leandro	Caltech
Sat.	10-17	2:00 pm	Women's Volleyball	Whittier JV	Caltech
Sun.	10-18	9:00 am	Water Polo	Caltech Classic	Caltech
Tue.	10-20	3:00 pm	Soccer	Pomona-Pitzer	Pomona-Pitzer
Wed.	10-21	4:00 pm	Water Polo	Pomona-Pitzer	Caltech
Wed.	10-21	8:00 pm	Women's Volleyball	Pacific Christian	Pacific Christian
Thu.	10-22	3:00 pm	Soccer	Master's College	Caltech
Sat.	10-24	9:30 am	Cross Country	Claremont & La Verne	Redlands
Sat.	10-24	10:00 am	Soccer	La Verne	La Verne
Sat.	10-24	10:00 am	Water Polo	Claremont-Mudd	Caltech
Sat.	10-24	12 noon	Soccer (JV)	La Verne	La Verne
Sat.	10-24	2:00 pm	Women's Volleyball	Christ College	Christ College

WHAT GOES ON

from page 12

**Russia Trip**

Interested in visiting the Soviet Union over spring break and experiencing "glasnost" first-hand? The 2nd year Russian instructor at Caltech, George Cheron, is planning to repeat the previous years' highly successful trips. The cost is \$1350 (includes everything: air fare, hotels, meals and tour guides). Open to students, faculty, staff and their friends. A group roster will be drawn up at an orientation meeting next Tuesday, October 20, at 12:30 pm in Dabney 2. For more information call x3615.

**Guitar Classes at CIT**

CIT Guitar Classes for the Fall Quarter will meet on Tuesdays in the new Student Activities Center (formerly Fleming Basement) in Room 1. The schedule is as follows:

Beginning Guitar	4:30-5:30PM
Intermediate	3:30-4:30PM
Advanced	5:30-6:30PM

Classical and Flamenco repertoires will be explored but the techniques transfer to other styles of guitar. The Beginning Class also includes a new jazz and folk chord system. Classes are free to Caltech students (and other members of the Caltech community, space permitting). Undergraduates can receive 2 units of credit if they choose. Private instruction on any level can also be arranged. The Instructor, Classical Guitarist Darryl Denning, has an international recording, teaching, and performance background and can be reached at (213) 465-0881.

**Pasadena's Other Football Team**

The Caltech Y has 25 UCLA football tickets for sale (games played at the Rose Bowl) for \$5 apiece. Available games are: Homecoming, October 24 vs. U. of California Bears (the old Bruins vs. Bears game), and UCLA vs. the Washington Huskies (November 14). Call The Y, x6163, to get your reserved seats.

**Amnesty International Party**

Amnesty International presents Dr. Blase Bonpane, director of The Office of the Americas. Dr. Bonpane is a dynamic and widely acclaimed author and speaker. He will be speaking on human rights abuses in Central America. Regional food and wine will be served. Come and enjoy yourself and support Amnesty International. Donation for students: \$5. 1pm-5pm, Sunday, October 18 at 1510 Oakdale St. in Pasadena. Call Dennis for information, 405-1068, or Claudia, x3576.

**Lose Blood, Gain Beer**

The Caltech Fall Blood Drive will be on Tuesday, October 27 (9:45 am to 2:30 pm), Wednesday, October 28 (12:15 to 5:00 pm), and Thursday, October 29 (8:15 am to 1:00 pm). There will be a contest between the Graduate and Undergraduate houses to see who can donate the most pints of blood. The rules are: 1/2 keg of beer or an equivalent amount of soft drinks goes to the house with the highest percentage of donors. The blood drive will be in Winnett Lounge. Please make appointments in advance if you can, although drop-ins are welcome if you can't plan ahead. For appointments call Denise Okamoto, x6374 in the Personnel Office.

**Minority Fellowships**

The National Consortium for Graduate Degree for Minorities in Engineering, Inc., (GEM) is accepting applications for its 1988 Fellowship competition which will provide one-hundred and thirty (130) awards to minority students in engineering.

Designed for members of ethnic groups that are underrepresented in engineering, the program's goal is to increase the pool of minority students who receive master's degrees annually in engineering. Persons applying for the program must be American Indian, Black American, Mexican American, or Puerto Rican, and must be citizens of the United States. At the time of application, the minimum academic requirement for the student is enrollment in the junior year of undergraduate study in one of the engineering disciplines. Those presently in their senior year or recently graduated are also encouraged to apply.

Each fellowship pays tuition, fees, and a stipend of \$5,000 per academic year, as well as provides summer employment with a sponsoring member employer. The total value of the award is anywhere between \$20,000 and \$30,000 and depends upon which member university the Fellow elects to attend.

Applicants must be received by December 1, 1987. Awards will be announced February 1, 1988. Information on the program, as well as application materials, may be obtained from:

GEM Program  
P.O. Box 537  
Notre Dame, IN 46556

**Work-Study At The Red Door**

Work-Study jobs paying \$6.00 per hour are available at the Red Door Cafe (2nd floor of Winnett, around the corner from The Y). Available shifts are 2-6 pm, Monday-Friday, 12-5 pm Saturdays, and possible evenings from 8-12. The Monday shift may be lengthened to 2-7 pm. Requirements are: a liking for people and the ability to ask for help without embarrassment. Flexibility and a sense of humor are musts. Apply at the Red Door, or call x6158.

**Watson Fellowships**

The Watson Foundation provides post-graduation fellowships of \$13,000 (\$18,000 for married students) for a year of independent study and travel. Fellowships are not intended to support extended formal study at a foreign university. They encourage, instead, an informal break in the normal sequence of undergraduate/post-graduate education. Caltech students are frequently chosen for this award. In fact, four recent graduates—Mark Carlin, Joe Francis, Rosemary Macedo and Andy Tikofsky—are on Watson Fellowships this year.

Drafts of project proposals are due today, Friday, October 16th. Seniors interested in applying for these travel fellowships should talk to Gary Lorden or Jeanne Noda in the Deans' Office, 102 Parsons-Gates.

**Work Study & On-Campus Jobs**

Students who are on College Work Study and those who are looking for work on campus are invited to visit us at the Career Development Center at 8 Parsons-Gates. There are lots of new listings every day. If you would like to do private tutoring, you can also sign up at the Center.

**Attention Swedes!**

The Swedish Club of Los Angeles is offering scholarships for 87-88 for \$500 to \$1000. To apply you must be a student residing in Southern California, must be of verifiable Swedish descent, have strong academic qualifications, be a citizen or permanent resident of the United States, and show financial need. Deadline is November 6, 1987. Send your resume to R.W. Jackson, 1250 E. Walnut St., Suite 210, Pasadena, CA 91106, or call (818) 795-1098 for more information.

**DOE Research Appointments**

The U.S. Department of Energy (DOE) finances research appointments in science and engineering that are administered by NORCUS, the Northwest College and University Association for Science. Participants in the program are placed with DOE contractors in Richland, Washington. Students or faculty interested in appointments outside the Richland area are requested to indicate the site of interest. Appointments are available for summer and during the academic year.

The program provides an introduction to science and technology and an opportunity to observe research methods while working under the guidance of experienced scientists and engineers. Candidates should have completed their sophomore year by the time they expect to participate in the program, have an above-average academic record, and possess potential for a career in engineering, mathematics, or the sciences. Most appointments are during the summer and last ten weeks. A stipend and travel allowance are included.

Completed applications must be received by December 1 to be considered for a summer appointment. Applicants normally are notified in late January whether they have been accepted. United States citizenship is required and applicants must be from U.S. educational institutions. For applications and information, write to:

The Northwest College and University Association for Science  
Tri-Cities University Center  
100 Sprout Road  
Richland, WA 99352

**Living In A Material World?**

The Society for the Advancement of Material and Process Engineering (SAMPE) is awarding 19 \$1,000 scholarships to college students pursuing courses leading to a career in Material and Process Engineering. Consideration is given to scholastic average, specific courses of study, academic awards and honors received, technical and other work experience and the student's communicated objectives in Materials and Processing technology. Competition starts October, 1987, and judging takes place in February and March, 1988, with awards being announced in April, 1988. Applications and details are available in the Financial Aid Office, 12-63 (515 S. Wilson, 2nd floor).

**Planetary Science Scholarships**

The Planetary Society is offering five \$1,000 awards to students majoring in engineering and science. Awards will be made on the basis of scholastic achievement, a commitment to a career in planetary related science, and a written essay on a relevant topic. The deadline for completed applications is April 15, 1988. Mail in cards for further information are available in the Financial Aid Office, 12-63 (515 S. Wilson, 2nd floor).

**Goddard Scholarships**

Applications are being accepted for the Dr. Robert Goddard Scholarship for 1988-89. The award is for \$7500. Applicants must be U.S. citizens in at least their junior year. Apply by letter to the National Space Club/Goddard Scholarship, 655 15th Street N.W., Suite 300, Washington, D.C. 20005. With your letter include your transcript, letters of recommendation from faculty, accomplishments demonstrating personal qualities, scholarship plans, and proven past research in space related science and engineering. **Deadline is January 15, 1988.** Some additional information is available in the Financial Aid Office, 12-63.

**Zonta/Earhart Fellowship**

Women majoring in aerospace related science or engineering fields are encouraged to apply for the 1988-89 Zonta Amelia Earhart Fellowship. The grants are for \$6,000. Qualifications are a bachelor's degree, qualifying for graduate school, and a superior academic record. Applications and recommendations must be postmarked by **December 31, 1987.** For applications and further information contact: Zonta International, 557 W. Randolph St., Chicago, IL 60606.

**Hispanic Scholarships**

The National Chicano Council on Higher Education is accepting applications for their Science Fellowship Program. Hispanic and Chicano students in at least their junior year are encouraged to apply. Exceptional sophomores may also apply. If selected, sophomores and juniors receive \$400 and seniors \$500. Additional funds are available for graduate studies. **Deadline is November 16, 1987.** Applications and further information are available in the Financial Aid Office, 12-63 (515 S. Wilson).

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continued on page 8

# WHAT GOES ON

**Announcements for *What Goes On*** should be submitted on an announcement form available in the SAC copy/mail room (Room 37) or on a plain piece of paper. Please indicate the date(s) you want the announcement to run. Send announcements to 25-58, or put them under the door of Room 40A of the SAC. Announcements must be received by the Tuesday prior to publication.

**Cheers!**

Always wanted to be a cheerleader but never had the opportunity? Well now is your big chance... The Caltech Cheerleading squad is being reformed on campus and we are looking for energetic men and women to participate in this exciting activity. There will be an organizational meeting on Thursday, October 22nd at 7:30 pm in SAC room #24. If you have any questions please contact Ellen Labgold, Page House #127, x6313. Hope to see you there!

**Reach New Heights**

Join the Caltech Flying Club and learn to fly. Check our rates and compare. You'll find that now is the time to learn. For more information on the Flying Club or about a demo ride, contact Jay Ebersoll, x6182, or Jim Kaufman, x3807.

**S.P.E.C.T.R.E. of Steven Barnes**

S.P.E.C.T.R.E., the Caltech Science Fiction Club, brings to campus science fiction author Steven Barnes, who will speak on "Self-Directed Human Evolution." The talk will be at 8 pm on Tuesday, 20 October, in 24 Beckman (south end of Beckman Labs, bldg 76 on your handy campus map). Mr. Barnes is the author of numerous teleplays and novels, including *Streetlethal*, *Dream Park* (with Larry Niven), and most recently *The Legacy of Heorot* (with Larry Niven and Jerry Pournelle). For more information, call Mark Loooper at 304-0006.

**Philharmonic Tickets**

The Caltech Y has tickets to two performances of the Los Angeles Philharmonic. October 30th's performance includes Harbison's "Diotima," Prokofiev's Piano Concerto #4, and Strauss's "Also Sprach Zarathustra". November 13th will include Stucky's "Dream Waltzes," Bloch's "Schelemo," and Rachmaninov's Symphony #2. Andre Previn conducts both evenings. Tickets and sign-ups in the Caltech Y, 2nd floor of Winnett. The number of tickets is limited, and each ticket costs \$3. Sign up soon or you won't get to go.

**Get Yer Red Hot ASCIT Minutes!**

Now you too can receive a copy of the most coveted publication on campus... the ASCIT minutes. Truly a masterpiece of modern weekly literature, the ASCIT minutes brings you inside the exciting world of Caltech student government. You'll meet Larry—the van magnate in search of his real name; Dugen—the man behind the QOFR; Jeff—the hopelessly optimistic leader; and a host of others as we venture each week where few dare to go... the ASCIT meeting. The subscription price is zero—a rare bargain for such a keen publication, and worth every penny—so drop a postcard to Eric Scharin, Secretary-of-the-Gods, mail code 1-53 or call him at x6236 to get yours now!

**TACIT's "A Life In The Theatre"**

Theatre Arts proudly presents its first production of David Mamet's "A Life in the Theatre." Starring David Stevens and Al Hibbs, it is a tale of life both in front of and behind the footlights. Performances are Oct. 23, 24, 30, and 31 at 8 pm. Oct. 25 at 7 pm and Nov. 1 at 2 pm. Get your tickets now at the Caltech Ticket Office or at the door.

**Caltech Folkdance Invitational**

On Tuesday, October 20th, 7:30 pm in Dabney Hall Lounge, will be two hours of beginning folkdance lessons. Easy dances will continue until midnight. This is your chance to get in on the basic level, and join in with a group of other beginners. Free of charge! No partner necessary, no experience required. Bring your friends! Join the fun!

**Buy Used Jock Stuff**

The Athletic Department has a considerable amount of surplus athletic equipment and clothing for sale. A general description of the items available is available on fine bulletin boards everywhere, and a detailed listing of specific items and minimum bids can be obtained from Roger Garcia in the Equipment Room at the Gym. Bids are to be submitted in writing to Marc Otto, Director of Surplus Property at 315 Keith Spaulding Building. Bids must be submitted by November 25, 1987.

**Gay/Lesbian Discussion Group**

An ongoing discussion group on Gay/Lesbian topics is held every Thursday evening beginning October 22 from 7:30 to 9:45 pm at the Archibald Young Health Center. All members of the Caltech community are welcome. Refreshments are provided. For further information please contact Bruce Kahl, x6393.

**Hand-Knitted Satellites?**

The Child Educational Center will hold its 1987 JPL Arts and Crafts Fair this weekend. The fair will feature over 60 booths of handcrafted goods, fine entertainment, great food and lots of children's activities. The free-parking-and-admission event will be held today, Saturday, October 16, from 3:00 pm till dusk, Saturday, October 17 from 9:00 am-5:00 pm, and Sunday, October 18 from 9:00 am-5:00 pm. There will be an auction on Sunday at 1:30 pm, with VISA and Mastercard accepted. Proceeds will benefit the CEC. The fair will be at JPL Mall, 4800 OakGrove Drive, La Cañada. Use the Berkshire offramp of the 210 freeway.

**Caltech Road Hockey Club**

The road hockey season is underway. New players are always welcome. Games are held every Saturday beginning at 9:30 am in the parking lot north of Beckman Auditorium. Contact Sheldon Green (796-3813) or Jeff Hall (796-9232) for details.

**Found Bikes**

Four bicycles were removed from Blacker and Ricketts at the beginning of the summer (for construction purposes). They have been rotting in the Bike Shop every since. If one of them is yours, contact Andrew Huntington, 1-58, 356-9136, with an extremely believable story about why I should give a bike to you.

**Is There Life After Homework?**

The Society of Women Engineers (SWE) has its general informational meeting on Tuesday, October 20, at 7:30pm in the Y-lounge. Undergraduates and Graduate women of all disciplines are encouraged to come. Come and give your input. SWE is what you make it. Refreshments will be served. For more info call Carol at x3775 or Catherine at x4744.

**Stud Shop**

Everyone interested in being a member of the Student Shop for this academic year should come to the shop on Monday, October 19 at 12:30pm. Membership is open to all members of the Caltech community; dues are \$15 for the year plus a \$10 key deposit. The shop is located in Winnett basement. Come prepared to spend an hour cleaning up the shop.

If you cannot attend this meeting, contact the foreman, Steve Waltman, x6828, after the meeting.

**Cinematech Presents *Metropolis***

This weekend, Cinematech is proud to present Fritz Lang's masterpiece *Metropolis* in its original form; that is, no colorization and no Rock-n-Roll music. So what's the movie about? According to the movie catalog I have, it is a "futuristic fantasy of totalitarian force and mob violence played out in a subterranean city said to have been inspired by the New York City skyline. Silent with music."

The film will be shown at 7:30pm tomorrow (October 17) in the Baxter Lecture Hall. Admission charge is \$1.00. For more information, contact James Shih (1-60, x3968).

**Sprechen Sie deutsch?**

*Der Argv von Stalingrad* is being shown Monday, October 19 at 7:30pm in Baxter Lecture Hall. It is a story of P.O.W. camp in Russia after WW II.

"Camp 511047, one out of thousands, has become a symbol by the mere fact that one of the physicians, Dr. Bohler, a prisoner as well, demonstrated to his fellow comrades with almost superhuman strength and determination how hate can be overcome by selfless love."

In German with English subtitles. Everyone is welcome. There will be an introduction of the film and discussion afterwards.

**Art thou Modern?**

"Modern Art and Old Adobe Styles of Mali, West Africa."

A slideshow will be given by Jim Barry on the art and culture of Mali. The talk will be on Wednesday, October 21 at 8pm in 24 Beckman Labs. The talk is free and all are welcome.

The talk is sponsored by the Caltech Y.

**Ivy Christians**

Inter-Varsity Christian Fellowship at Caltech will have a large group meeting in Millikan Boardroom on Wednesday, October 21 from 7:30 to 9:00pm. The speaker will be Paul Byer of IVCF, and his topic will be "Small Groups". If you are even a little bit hip, you will know that this will be a good talk on a vital topic. So, please attend Wednesday's meeting to worship, learn, and fellowship. If you have any questions, please call Robby Rob or Mark Ma, x3776.

**Ivy Bibles**

Hey freshmen! Inter-Varsity Christian Fellowship at Caltech is holding Bible Studies just for you. The studies will cover I John this term. Studies are one hour per week, and their purpose is to strengthen freshmen in the Word and to provide a support group for them. Frosh studies will be held:

Thursdays, 8-9pm, room 229 Ruddock  
Fridays, 8-9pm, room 114 Ruddock  
Sundays, 2-3pm, room 301 Thomas

If you are interested in a Bible study, or if you have any questions, please contact Larry Trout or Mel Senft in Ruddock 114, or Scot Wolfe in Ruddock 229.

**The Game Is Up**

Physics 2, section 3 students should be sure to come to section today. The results are in on the "Quiz Pool." Who will be the lucky winner?

**Ted Turner Talks Turkey**

Media Magnate Ted Turner will speak about arms control, politics and sports at Beckman Auditorium at 8:00 pm on Wednesday, Oct. 21. Turner is the president and chairman of the globe-spanning Turner Broadcasting System, the organization of which Cable News Network is a part, and is the owner of two pro sports teams. The talk will kick off the President's Lecture Series. To obtain the free tickets, call x4652.

**Career Development Seminars**

The **Resume Writing Workshop** for MS students will be on Monday, Oct. 19 from 3:00-4:00 pm at the Coffeehouse. For the undergraduates, the **Resume Writing Workshops** will be held by houses and will meet in the Coffeehouse. Students may, however, attend any workshop.

Tuesday, Oct. 20, 3:00-4:00 pm, Fleming, Page.

Wednesday, Oct. 21, 3:00-4:00 pm, Ricketts, Dabney, Blacker.

Friday, Oct. 23, 3:00-4:00 pm, Ruddock, Lloyd.

The **On Campus Interviewing Process** seminar will be held on Wednesday, October 28 from 2:00-3:00 pm at the Coffeehouse.

Please visit the Career Development Center if you need more details or call us at x3631.

**Women Faculty Seminar Series**

Francis Arnold, Assistant Professor of Chemical Engineering, will discuss her current research in protein engineering. All interested campus members are welcomed, even and especially if you aren't sure what exactly protein engineering is! Monday, Oct. 19, 12:00 noon in 151 Braun.

**Abigail Adams Beer Hour?**

The Abigail Adams Beer Hour for the Advancement of Women (and Others) in Science! Thursday, Oct. 22, 5:00 p.m. in Braun Courtyard. The first of these monthly OWC events, entitled "Women in Science: Perceptions and Attitudes," will be hosted by the chemists. All campus members interested at least as much in the topic as the beer are welcomed, and undergraduate and graduate students are especially encouraged to come and meet peers and possible role models.

**Company Information Meetings**

Monday, Oct. 19, 1987: Eastman Kodak Co. information meeting will be held at #117 Noyes from 4:00 to 5:00 pm. Dr. John Nelson, a Caltech alumnus will be the speaker.

MIT Lincoln Lab will be having an information meeting at Winnett Lounge from 4:00-6:00 pm.

General Motors will be having an information meeting from 2:00-3:00 pm at Winnett Lounge. Everyone is invited to attend.

**Linen Exchange**

Undergraduate students were issues two sheets, two towels, one pillowcase and a mattress pad as part of the housing check-in process. You may exchange linens and towels on a one-to-one exchange basis for clean items each week at the following times in the South Complex and North Complex On-Campus Undergraduate House basement linen rooms:

Tuesdays, 7:30 am-9:00 am  
Wednesdays, 12 noon-1:30 pm  
Wednesdays, 7:30 pm-8:30 pm  
(North Complex basement only, providing service to all students)

Thursday, 2:00 pm-3:00 pm  
The Wednesday evening linen exchange is a new service being provided to students! Residents of Off-Campus Undergraduate Houses, Braun and Marks House, and the two apartment complexes may exchange linens in the North Complex linen room.

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for electronic technician work, wire wrapping, PC-board assembly etc. Part time, flexible hours, good pay. Send resume or call: Will McCown, Cheshire Engineering Corporation, 650 Sierra Madre Villa, Suite 201, Pasadena, CA 91107. (818) 351-5493.

**FOR SALE-**

**AIRPLANE TICKET** One way to Toronto or Detroit. Saturday, October 24. Very Cheap. Call David at ext. 6154.

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