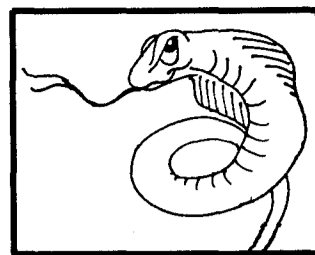


**This is the
best Christmas
ever!**

The California Tech



Volume XCV, Number 10

Pasadena, California

Friday, December 3, 1993

Zug climbs to NCAA nationals

by Jim O'Brien

On a cold, clear, and blustery afternoon at the Oakland Acres Golf Course in Grinnell, Iowa, the NCAA Division III National Cross Country Championships were conducted. North Central College of Naperville, Illinois dominated the men's 8k race, placing four runners in the top six, including the top two athletes for a record low 32 points. New York's Cortland State women ran a cagey, well-paced effort to emerge victorious for the fourth time in the last five years, using a strategy of going out controlled and coming on strong in the second half.

The individual winners were Dan Mayer of North Central in 24:29 and Renea Bluekamp of Calvin College in Michigan with a time of 17:46. Top runners from the Western Region were Matt Newman of Claremont Mudd/Scripps in 25:46 and Becky Kopchik of Occidental in 18:20.

On the men's side, the teams from the Western Region struggled as none of them ran up to their capabilities. U.C. San Diego (14th), Claremont (17th), and Pomona-Pitzer (21st) all put in game efforts, however. The women's race had UCSD placing 11th and CMS at 15th, each finishing about as expected.

Caltech was represented at the NCAA National Cross Country Meet for the first time in school history by Andy Zug, who earned his trip to the race by qualifying as an individual at the NCAA Western Regional Meet at Prado Park in Chino last week. Zug placed



The bust of Robert A. Millikan, masquerading as jolly old Saint Nick, gazes thoughtfully over his watery namesake as Heide Li polishes his shiny nose.

168th in a time of 28:11, which is well off his personal best. The initial fast pace by the entire men's field took its toll on him in the later stages of the race, but he courageously hung in despite a severe side stitch.

"Andy gave it his best shot and I'm proud of his efforts over the entire season," commented Coach

Jim O'Brien. Zug says, "the experience at Nationals, competing among the elite Division III runners, only serves to make me more determined to excel in the upcoming track season."

Congratulations on a superb season, Andy!

David Brin to speak at FOCAL dinner

by Caltech Public Relations

David Brin, astrophysicist and winner of multiple awards for his best-selling science fiction novels, will discuss his most recent book, *Glory Season*, at the annual dinner of Friends of Caltech Libraries (FOCAL) on Monday, December 13, in the Athenaeum, on the Caltech campus, at 7 P.M.

The author, who initially vowed never to become a "professional" writer, soon changed his mind after his second book, *Startide Rising*, won the prestigious Hugo, Nebula, and LOCUS awards as

the best novel of 1983. Brin's latest novel focuses on the adventures of Maia, a 16-year-old female born into a world run by and for women, in which most children are conceived as clones of their mothers. *Glory Season* is about Maia's struggles to overcome the limits inherent in her world.

Brin, a resident of Altadena, received his B.S. degree in astronomy from Caltech, and a Ph.D. in space physics from UC San Diego. He has worked as an engineer at Hughes Aircraft and, at the California Space Institute, he helped analyze the proposed space station

and other projects for NASA. In addition, he has taught physics and writing courses at the university level.

Brin will be available to autograph books during a social hour beginning at 6 P.M. The event is open to the public but reservations are necessary by December 7 through Gloria Thomas at (818) 395-6411. The cost for dinner is \$45 for FOCAL members and \$55 for non-members. Proceeds will benefit the Caltech special book collections.

For more information please call Winifred Veronda at 799-5010.

Student-faculty committees discuss undergraduate issues

by Flora Ho

Editor's note: this article is part of an ongoing series of reports on the progress of several student-faculty committees preparing for the February conference.

Honor System

Present, November 18: Vicki Brown (co-chair), Stephanie Haussman (co-chair), Chris Brennen, Chris Bryant, Anne Dudzik, Peter Fay, Julie Kornfield, Roger Moore, Anna Mulhern, Richard Murray, Tatsuya Murase, Jerry Pine, J. P. Revel, David Rutledge, and Kim D. West.

The South Master Key issue constituted the bulk of the discussion. Not only security, but the Honor System and the trustworthiness of students seem to be involved. Proposed solutions to the problem of key (and building) over-accessibility include changing the locks to a push button lock system (like Rud-dock), creating a new master key (which would involve replacing the tumblers on the doors), or instituting a card-swipe system (where students use their I.D. cards as key cards).

The procedures of the Board of Control were also discussed. Many faculty members do not know how it operates, or what they should do after reporting an infraction. Additionally, committee members talked about the contents of the *Synthesis* newsletter, which addressed the subject of academic integrity. According to several surveys, schools with honor codes have lower incidences of cheating than schools without honor codes, a strong argument for retaining ours.

Improving Communication

Present, November 18: Jill Bush (chair), Richard Murray (faculty advisor), Moeen Abedin, Jim Bower, Judith Cohen, Seiya Fukuda, Asif Hassan, Karen Shih, and Kim West.

Two sets of goals, one short-term and one long-term, developed from these past two meetings. In the short term, a survey to understand why people graduate

without research experience will be drawn up. The results of this survey will be presented to the February faculty board meeting, since the focus of the committee will be on improving communications between students and faculty via research experiences. The long-term goals deal with the recruitment of faculty for Avery House (for instance, by communicating with faculty members who have had experience interacting with undergraduates, such as advisors), the maximizing of undergraduate research (by including undergraduate research in the core curriculum, for example, or by encouraging more students to apply for SURFs, since lack of funding is no longer a significant problem), and the establishment of small group student-faculty interactions based on common interests.

Quality of Teaching

Present, November 24: Ben McCall (chair), Jon McDunn, Steven Frautschi, Robert Grubbs, Helen Hasenfeld, James Lee, Joe Lee, Vincent McKoy, Prasanth Surampudi, and T.A. Tombrello.

Students have been assigned to research various topics regarding the quality of teaching at Caltech. Some of the topics covered will be the effectiveness of the different types of teaching quality questionnaires, the views of students on the various ombuds systems, Nate Lewis's informal lunch meetings with Ch 1 students, and an e-mail survey of students on what other schools do to improve teaching quality. Quality of teaching issues apply not only to professors, but to teaching assistants and visiting professors as well. Perhaps a booklet with information about Caltech's teaching environment would be useful. Most importantly, students should be encouraged to be frank with their feedback and faculty should be encouraged to respond positively to this feedback—to this effect, a "how to talk to faculty" presentation, perhaps at frosh camp, could be helpful for students who find it difficult to give direct feedback.

The California Tech

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Results of the ASCIT Bylaw amendment vote

Amendment 1—Clarification of the BOC article
Passed (135-25)

Amendment 2—BOC eligibility requirements
Passed (143-32)

Please send in your C.L.U.E. reviews

to Flora Ho, M.S.C.
217, or by e-mail to
floho@cco.

editorial

Got any spare time?

The end of first term is nearly here, and a few foolhardy office-seekers have already begun thinking about next term's ASCIT elections. The editors have, also—with some concern, as we haven't heard the vaguest rumor that anyone wants to replace us.

Editing this newspaper is hard work. Currently, each of us spends about twenty hours per week on the *Tech*, and we are always hampered by a lack of material to fill our eight or twelve pages. Each team of editors has tried hard to recruit staff members, but there are never enough interested people.

Our problems have fairly simple causes. First, Caltech is too small and insular to support a big-university-style weekly newspaper. Weeks can pass here without a single important campus news story. Still, the school needs the *Tech*, as it is the only voice of the students, and the only regular publication at the Institute that can

print the news when it does happen. Second, Caltech's crushing workload (and perhaps a general apathy) discourages people from spending much time on extra-curricular activities. When Caltech students do make a strong commitment to anything other than their work, it is nearly always to a single activity. If the *Tech* has to compete with a job for someone's time, it will lose.

No one can improve the first situation, but we think there is an easy way to overcome the second. We suggest that a larger group—say, five to seven people—run for *California Tech* editor.

The advantages would be many. Each editor could have a specialized role (e.g., managing editor, news editor, or layout), making production better and more efficient. One of the editors could take a week off without undue strain on the others. The editors would have more time, collectively, to keep in touch with the writers, photogra-

phers, and the business manager, improving communication. Most importantly, though, a large editing team would provide an instant, dedicated staff, each of whom would be paid and would feel an overriding responsibility to the paper.

Even with a large team, the *Tech* will require a lot of work and sacrifice. We do not expect that it will be easy for anyone to find five people willing (or insane enough) to do the job. Still, we hope that our suggestion will inspire someone to assemble some friends and run. We should say, lest it sound like we hate this job, that we do not regret our year as editors. The *California Tech* editorship is possibly the most rewarding and effective ASCIT office. We would simply like the *Tech* to improve, and to see next year's editors have an easier time than we have.

Please send letters to the editor to *The California Tech*, Caltech 40-58, Pasadena, CA 91125, or by e-mail to editors@tech.caltech.edu. The *Tech* reserves the right to edit all letters for brevity or otherwise, and to refuse to print any letter for any reason.

Write for the *Tech*.

There's no *Tech* staff meeting this Friday, but don't let that stop you—there'll be plenty of free pizza next term.

The next issue will be out the first week of second term, on January 7. We'll need all the material we can get to fill it, so start writing now.

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Ernest Tomlinson

Ernest Explains

Dear Ernest,

I have a terrible, red stain in my nicest summer jacket, which is made of linen. How can I remove it?

—Fretting in the Laundry Room

Dear Fretting,

The stain is wine, and should come out with a little club soda.

Dear Ernest,

What is the origin of the old expression, "like the dickens"?

—Perplexed in Church

Dear Perplexed,

As you might have guessed, the emphatic phrase had its origin with the popular nineteenth century author Charles Dickens.

Dickens was famed for living a life of excess and debauchery. He would, for example, routinely gorge himself at the dinner table, stuffing food in his mouth as fast as he could until he was forced to vomit. He had a scandalous fondness for the prostitutes of London, and was known to bed up to five or six women in a single night. He made a sport of driving around the streets late at night in his carriage at breakneck speed. Most loathesomely, he had puerile taste in art, and would spend thousands of pounds annually on amateurishly painted pictures of naked women carousing with pastel animals and circus folk.

It became popular among his friends, and later in the elite literary circle of England, to say that one was "behaving like Dickens" whenever one was acting excessively. The term came into general use in the earlier part of this century when Dickens's works became part of the canon of literature.

Dear Ernest,

I have examined the front page photo from the November 12 *Tech*, and, try as I might, I cannot find any rainbow over the parking structure. Is there really one in the photo?

—Bamboozled

Dear Bamboozled,

There is a rainbow, but it is only visible to the pure of heart. Better luck next time.

Dear Ernest,

My friends and I have a question for you. When Chairman Mao Zedong said, "Political power grows out of the barrel of a gun," did he mean to condone violence in achieving one's political goals, or was it a cynical observation of the declining morals of today's political leaders?

—Rob Emu

Graduate Student, Political Science

Dear Rob,

I'm very disappointed in all of you.

ynews

by Sam Webb

Well as the term comes to a close, it can mean only one thing. Yep, this weekend is decompression. If you didn't know about it already, it'll be Saturday and Sunday nights, and we'll provide tons of great food and entertainment. It's definitely a must for the short minutes between finals. In other news, the Pasadena Posada occurs this weekend on Saurday, December 4th. The event is a candlelight walk through Pasadena to increase the awareness of AIDS and help raise money to help those who are living with HIV in the San Gabriel Valley. If you're interested in being a part of this event, call the Y for more information. That's the news for this week... good luck on finals, and have a happy holiday.

TONIGHT'S ASCIT MOVIE

The Untouchables

STARRING KEVIN COSTNER

Friday, December 3
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7:30 & 10:00

\$1.50 for ASCIT members
\$2.00 for all others

This is the last ASCIT Movie of the term.

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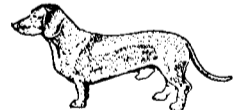
COLORADO
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(818) 796-9704

Robert Altman's

SHORT CUTS

Daily 4:20, 8:10 p.m.
Sat-Sun Bargain Matinee 12:30 p.m.

The California Tech



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Angola

Representatives of the Angolan government and UNITA rebels met without their U.N. mediator to discuss conditions of a cease-fire. The U.N. estimates that civil war in Angola kills 1,000 people a day.

Armenia

Armenian forces captured Azerbaijan's last outpost on its southwestern border with Iran. Armenia and Azerbaijan have been fighting for six years over the disputed Nagorno-Karabakh enclave.

Bosnia-Herzegovina

The second attempt to evacuate women, children and the old from Sarajevo was postponed.

Burundi

The government announced that the tribal violence which has broken out between Hutus and Tutsis following the murder of Hutu President Melchior Ndadaye may have caused over 150,000 deaths. The Tutsi-controlled army led an unsuccessful coup against the Burundi government that resulted in the death of President Ndadaye and several of his cabinet members. The violence is the worst that has occurred in Burundi since 1972, when tribal fighting killed 150,000. 800,000 have fled the country: 375,000 to Rwanda, 245,000 to Tanzania and 50,000 to Zaire. U.N. refugee officials said that at least 100 were dying each day on refugee camps in Rwanda. 85% of Burundis are Hutu, while the other 15% are Tutsi. The Tutsis have ruled the country for centuries, and have dominated the government and military after the country became independent from Belgium. Ndadaye was elected President last June in the country's first democratic elections, becoming the country's first Hutu leader.

Columbia

The Colombian government agreed to renew protection for the family of drug lord Pablo Escobar after the family was denied asylum in Germany. The Colombian government said Monday that it would stop protecting the Escobar family, but later said that the government had a responsibility to protect all citizens. Pablo Escobar is a head of the Medellin drug cartel, and a vigilante group called People Persecuted by Pablo Escobar has been attacking associates of Escobar. The group is believed to consist of police and members of a rival drug cartel.

Denmark

The Dutch Parliament voted 37 to 34 to pass the industrialized world's most liberal euthanasia law. Under the new law physicians who

perform assisted suicides on patients in extreme pain who request death would not be subject to prosecution.

Egypt

Islamic fundamentalists exploded a car bomb near Prime Minister Atef Sedki, killing one and injuring nine. The Prime Minister was unharmed.

Germany

Steffen Heitmann, whom Chancellor Helmut Kohl nominated for President of Germany last September, withdrew from the race for President. After a series of blunders and controversial statements, Heitmann had a public approval rating of only 10% to 15%. Roman Herzog, president of the Federal Constitutional Court, is considered likely to replace Heitmann as the Christian Democrats' nominee. In Germany, the President is a largely ceremonial office. The withdrawal is viewed as a personal defeat for Chancellor Kohl.

The Minister-President and cabinet of the German state of Saxony-Anhalt resigned over charges that state officials had been padding their paychecks. Audits of the state leaders showed that Minister-President Werner Muench had taken \$172,000 in excess pay over the last three years, and that three of his ministers had taken another \$358,000. Muench and his cabinet are members of the Christian Democratic Party, and the resignations are seen as an embarrassment for Kohl's ruling coalition.

Germany banned the Kurdish Workers Party and raided Kurdish offices and homes after a series of terrorist attacks on Turks by Kurds. Turkey is currently fighting separatist Kurds in southwestern Turkey.

India

Early results from Indian state elections showed that the right-wing opposition Bharatiya Janata Party (BJP) has lost some of its popularity. Preliminary results showed that the BJP may have lost its majority in Uttar Pradesh. The BJP is a right-wing, fundamentalist party, and is the primary opposition to the current government.

Iraq

Iraq formally agreed to long-term monitoring of its weapons program, one of the key U.N. con-

ditions for lifting the oil embargo on the country.

Israel

Palestinian riots broke out after Israeli troops killed Imad Aqel, a commander in the Islamic Resistance Movement (Hamas). In attempting to stop the riots, Israeli soldiers injured 40 Palestinians and killed one. Prime Minister Yitzhak Rabin said that Israel will not give the Palestinians autonomy until he is assured that Israel and the Jewish settlers in the West Bank will be safe.

After several skirmishes with Israeli troops, the Fatah Hawks faction of the P.L.O. announced that it would begin attacking Israeli citi-

zens and soldiers. Israel and the P.L.O. have not formally agreed to a cease-fire, but P.L.O. leader Yasser Arafat has ordered all P.L.O. members to stop attacks on Israel. Several mainline P.L.O. groups led by Yasser Arafat repudiated the Fatah Hawks announcement.

Mexico

Luis Donaldo Colosio picked by the ruling Institutional Revolutionary Party (PRI) as their candidate for president. The PRI has dominated politics in Mexico for decades, winning all presidential elections. Opposition parties have claimed that the PRI has won recent elections through fraud.

Manuel Camacho, who was considered a likely choice for the PRI's candidate for President, resigned as mayor of Mexico City days after Luis Donaldo Colosio was picked as the PRI's candidate. The resignation is considered a sign of his disappointment at losing the nomination to Colosio. Some PRI leaders said that Camacho had a political following, and feared that he could cause a split in the long-dominant PRI by defecting to the opposition. Camacho was considered the most likely candidate to press for political reforms, while Colosio was considered the most likely to continue the current president economic austerity program. Camacho said that he was resigning to take an unspecified federal post—the government later announced that Camacho would become foreign relations secretary.

Nigeria

General Sani Abacha who took control of the country from a military-installed civilian government November 17th, appointed an all civilian cabinet which included many who opposed his military rule. Some appointed to his cabinet are supporters of billionaire Moshood K.O. Abiola, who won June elections that the military later declared invalid.

General Abacha removed 17 officers loyal to the previous military regime.

Romania

The World Health Organization reported that some of the HIV-

tainted blood that distributed by a German company came from Romania. The Romanian health minister has confirmed that the blood was bought from poor Romanians. The officials who authorized the sales claim that the blood is tainted with hepatitis, not HIV.

Russia

Yeltsin warned opposing parties to tone down their televised attacks on him and his proposed constitution. He said that political parties which campaign by attacking him or his proposed constitution would lose their right to T.V. advertising. Election officials appointed by Yeltsin passed laws banning speeches which promote animosity between Russians, and give Yeltsin's administration a good deal of freedom in deciding what advertisements are likely to promote animosity.

Somalia

Somali regional clan leader General Mohammed Farah Aidid decided to boycott a conference over U.N. aid to Somalia until three of his top aides are released by the U.N. The meeting is an attempt to form agreements between the rival clans in Somalia, which is somewhat difficult to do without Aidid.

South Africa

Lucas Mangope, the black, right-wing President of the Bophutswana homeland, said that Bophutswana would not be incorporated into South Africa. The South African government plans to have a new constitution within half a year, under which the apartheid would end, blacks in South Africa would get full citizenship, and the black homelands would be reincorporated into South Africa. President Mangope said that with the assistance of white separatists and the other homelands, Bophutswana would stay independent of South Africa. He denounced Nelson Mandela, the A.N.C., and the new constitution. Bophutswana is a homeland within South Africa which was created by apartheid proponents as a separate nation for blacks to live in. Bophutswana is currently only recognized as a country by South Africa and the three other "independent" homelands which were formed. Bophutswana has two platinum mines and is the only homeland which is close to self-supporting.

see WORLD NEWS, page 10



zens and soldiers. Israel and the P.L.O. have not formally agreed to a cease-fire, but P.L.O. leader Yasser Arafat has ordered all P.L.O. members to stop attacks on Israel. Several mainline P.L.O. groups led by Yasser Arafat repudiated the Fatah Hawks announcement.

Israeli and P.L.O. leaders attempted to find ways to stop the recent violence in the Gaza Strip from damaging the peace talks and plans Palestinian autonomy. Israeli commanders agreed to search for guerillas less vigorously, and mainline P.L.O. leaders agreed to try to get the Fatah Hawks to resume observing the unofficial cease-fire.

Israeli troops also killed Khaled Mustafa Zer, another commander in Hamas.

Japan

The Tokyo Stock Exchange reached a low for the year, with the Nikkei Stock Average dropping 3.87%, or 647.66 points, to 16,078.71. Finance Minister Hirohisa Fujii said that the government could do nothing to stop the drop, while the minister of international trade and industry, Hiroshi Kumagai, said that the

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Happy Holidays!

IT'S COMING

The Financial Aid Form (FAF) as well as instructions for both the 1994-95 Renewal Application and the FAF will be mailed to you at your permanent home address in December.

If you do not receive the Renewal Application or the aforementioned packet by January 10, 1994, please stop the Financial Aid Office at 515 S. Wilson, second floor to request a new packet.



by Gypsy Achong

11/11 A first aid kit is missing from the Office of Public Events. \$37.45
 11/1-10 \$300 was stolen from an office in Keck. The office was locked, but the drawer containing the billfold was not. There was no sign of a forced entry or of any tampering with the lock. \$300
 11/2 7:30 P.M.-11/11 10:00 A.M. An amplifier and two speakers were removed from a vehicle parked in the west area of the West Wilson parking lot. The amp and speakers were both artfully hidden behind the seat of the pickup.
 11/10-11 8:00 P.M.-8:00 A.M. A radio cassette player was stolen from a vehicle parked in the West Wilson parking lot. \$170
 11/10-11 10:00 A.M.-9:50 A.M. A vehicle parked in the west corner of the West Wilson parking lot was burglarized. The driver's side window was shattered and the door had pry marks on it. Nothing but the face plate and stereo knobs were taken because the stereo was well secured.
 11/11 2:30 P.M.-2:45 P.M. The speakers were removed from a car parked in the Chester parking lot.

11/11 3:30 P.M.-16 6:40 A.M. A calculator and cash box were removed from an office in Watson. The desk drawer (containing the money box) was locked but the office door was open. The calculator was left in a file tray on the desk.
 11/15-16 5:45 P.M.-9:05 A.M. \$150 was removed from the Red Door Café. The cash was contained in an unlocked box. There were no signs of a forced entry.
 11/16 1:00 P.M.-18 1:00 P.M. A computer mouse was removed from an office in Building Services. \$100
 11/19 1:30 P.M.-11/21 9:15 A.M. \$45 of department money was stolen from the copy room in Steele. The money was in a locked box in an unlocked desk.
 11/20 1:00 A.M.-11/21 10:00 A.M. A cellular antenna was pried off of a student's vehicle. \$60
 11/22 10:30 A.M.-1:00 P.M. \$30 and 2 visa cards were removed from a student's backpack in Keck.
 11/22 2:45-5:00 P.M. A Buick, parked on California Blvd. in front of BSB, was stolen.
 11/23 4:30-4:45 P.M. A bike was stolen from outside the west entrance of Baxter. The bike was not locked.
 11/23 3:00-5:00 P.M. An AM/FM cassette car stereo was removed from a car parked on Hill just north of San Pasqual. The passenger side window was shattered, and the dashboard was ripped apart. Damages \$1900, stereo \$400
 11/24 4:30-5:10 P.M. A mountain bike was stolen from the east side bike racks of Keck. The bike was locked with a chain and lock. \$75
 11/28 9:00 A.M.-6:00 P.M. A 10-speed bike was removed from the bike rack on the north side of Church lab. The bike was locked. \$100

This week's total: \$3217.45 + 1 Buick

Salomon Brothers

Quantitative Research Analyst

Salomon Brothers is an international investment banking firm that makes markets in securities and provides a broad range of underwriting, financial advisory and research services to governments, corporations, and institutional investors.

The **BOND PORTFOLIO** and **EQUITY PORTFOLIO ANALYSIS GROUPS** work with Sales, Trading and Investment Banking to help Salomon Brothers' clients quantify and implement investment, capital raising, hedging, and asset allocation strategies. This work includes the development of new theoretical models for securities valuation, statistical analysis of data, and the development of customized client presentations.

Quantitative Analysts often act as generalists for up to two years, after which they specialize in one or more of the following areas:

- Modeling financial products such as mortgage-backed securities and options
- Portfolio structuring and/or asset allocation
- Analysis integrated with Sales, Trading, or Investment Banking activities
- Analysis of stock and bond market returns and yields
- Analytical systems development.

Qualified candidates will have a B.S. in a quantitative field such as Computer Science, Engineering, Finance, Mathematics, Operations Research, or Statistics. Good analytical and computer skills (C/Unix preferable) are required. Because so much of the analyst's work involves direct interaction with the Firm's clients, strong interpersonal, writing and speaking skills are also important. While a background in finance or economics is helpful, we believe that an analyst with exceptionally strong quantitative skills can come to a deep understanding of the financial markets.

Training for quantitative analysts includes:

- An introduction to securities analytics
- A period of internship in different quantitative groups
- Immediate hands-on training with professionals working on various projects
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- Additional technical training as needed to handle newly assigned tasks.

**The Quantitative Research Department will be interviewing
on Campus February 8, 1994**

Resumes should be submitted to:

Joan Dolph
Salomon Brothers
Research Department
Seven World Trade Center, 37th Floor
New York, NY 10048
Fax # (212) 783-4615/4616

RAVE REVIEWS

Michelle's XXX

by Leo Fontaine

Tuesdays at club 7969 (formerly Peanuts), Michelle's is located at the same bar as Sin-a-matic, and that's about all the two clubs have in common. O.K., you can wear the same jeans and T-shirt or basic black outfit to both clubs, but don't dress cheap for Michelle's.

Michelle's is a topless revue aimed at lesbian women and their friends. According to Michelle, men are welcome there "if you respect the clientèle." This policy may change, so ask before you go. The club is a strange cross between Chippendale's and a strip bar. The dancers are very attractive women who artfully dance around on the floor (and possibly on your lap—for tips, typically \$1). At the end of each woman's set she will dance topless for a while on stage. Once a dancer is topless, state law forbids anyone from touching her, so tips must be thrown. At all times, patrons are forbidden to touch a dancers breasts or genitals.

Only the main room is used for this club, and much of the dance floor is reserved for the dancers, so the place tends to be quite crowded. The patrons tend to get quite rowdy, too—it is not uncommon to hear women yelling "encouraging" comments at the dancers. Apparently, tables can be reserved, and this is recommended. Before, and after the show there is music so that the patrons may dance with each other.

Michelle's supposedly has some type of membership card that gains you a discount on repeat visits, but this is unclear. I'd recommend asking about the cover, and reserving a table before going. When you go there, if you get there early, you can park on the lot at the club. Otherwise, park on the street nearby. The parking meters aren't active after 6:00 P.M., so there is plenty of free parking.

Michelle's XXX, Tuesdays at club 7969 (formerly Peanuts), 7969 Santa Monica Blvd, West Hollywood, (213) 654-0280 or (213) 654-0281. 18 and over.

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ADAM VILLANI: MEDIA GUY

by Adam Villani

Depeche Mode
The Forum, Nov. 21, 1993

Anybody coming to this show expecting to just see four guys on synths was in for a big surprise. Depeche Mode made up for the fact that their music effectively "comes out of a can" in concert by developing some of the most compelling visuals of any band I've seen on stage.

Behind lead singer David Gahan, nine square movie screens formed a base for the raised part of the stage for the three synth players. Behind them, two large screens dominated the background. Designer Anton Corbijn filled these screens effectively with images to accompany each of the songs. For example, during "Walking in My Shoes," orange silhouettes of a bird-woman strutted across the nine smaller screens, in Warhol-esque repetition. The films enhanced the performance without drawing attention away from the band.

Moreover, Martin Gore played a real live electric guitar on about a third of the set, and Alan Wilder did the same on an acoustic drum kit. It was particularly interesting to see live drumming accompanying songs like "Never Let Me Down Again," that were originally done on synthesized drums. My only complaint is that very few of Depeche Mode's older songs were performed, but I guess it's perfectly within their rights to concentrate on newer material.

David Sylvian and Robert Fripp
"The First Day"

This is a great new album from ex-Japan guitarist David Sylvian and erstwhile King Crimson guitarist Robert Fripp. The first few songs blend stylish guitar and funky bass lines reminiscent of 80's-era King Crimson with catchy melodies and a laid-back, yet powerful feel. "Darshan," the second-to-last track, is a seventeen-minute ambient dance piece, and the last track is beautiful, atmospheric Fripp guitar. The sound is conventional enough to appeal to non-prog-rock fans, yet is still a must for any art-rock collection.

Newsweek is Lame

In the cover story of the Nov. 29 issue of *Newsweek*, they get the name of my high school wrong four times. When a national magazine like this gets the details I know about wrong, it makes me wonder if many of the details I don't know about are wrong, too. For that matter, is their "big picture" in error, also? One can only guess.

Barney and Friends

What's the deal with the immense hatred everyone seems to have for Barney? People forget that Barney is a children's show, and isn't intended for adults. I watched the TV show and listened to his album, and they appear just fine for kids' entertainment. Speaking of the Barney album, *Rolling Stone* gave it their lowest rating (1 star), and noted that the songs were the same length as hard-core punk songs. This is like criticizing a sound effects album because you can't dance to it. They're using the wrong standard. They furthermore imply that Barney is "brainwashing" today's children. Well, if that means that today's children will grow up to be creative, friendly, and polite, then I'm all for it. It's really sad that the same magazine harshes on Barney and glamorizes Snoop Doggy Dogg.

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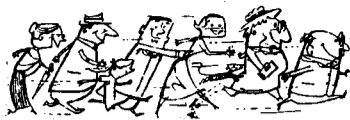
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entertainment

G'N'R's Spaghetti covers: friendly thrash

by T— and X

We were really rip-roarin' ready to hear the new Guns 'N' Roses work—so ready to crank it and knock some people down. "The Spaghetti Incident?" comes complete with a delicious look at orange-grease curls of microwave spaghetti.

What will really knock some people down is the first two pages of the booklet. No lyrics were printed there, and we all know what that means—publishing companies don't allow the reprint of lyrics on cover songs. Yep, that's a whole album (twelve tracks and a bonus) of cover songs. A whole spectrum of styles is represented and reinterpreted in G'N'R's classic thrash sound.

In the first track, the piano part comes right out of the jukebox at Rose City Diner—"Since I Don't Have You," by The Skyliners. It blew us away. Not by power, but by the art and ingenuity of it all. G'N'R and 50's rock 'n' roll don't work. Or at least they shouldn't. Marty McFly rocks the house.

The big problem: the heavy guitars, bass and drums completely overwhelm the vocals. You can't hear but some whining and screaming in the background due to the bad balancing. There's great mixing of everything else though, as the sound quality and clarity is incredible. Let's give a hand to producer Mike Clink and mixing engineer Bill Price.

There's a new guitarist here, believe it or not. A Gilby Clarke

(who?) plays rhythm guitar on most of the songs, but he's a bit hard to pick out. I suppose he was really brought in to the live scene to play the rhythm parts during Slash's solos, just to fill in the space that Izzy Stradlin once ruled.

Soundgarden fans will appreciate the cover of "Big Dumb Sex." A little thinner sounding, since Soundgarden's trademark heavy, growling guitars are redone in Slash's clean, warm, grindy sound.

T. Rex, "Buick Makane." Nazareth, "Hair of the Dog." "Human Being," by The New York Dolls—a great kazoo outro by W. Axl Rose included. "Down on the Farm," by The UK Subs. "New Rose," by The Damned. Iggy and the Stooges, "Raw Power." "Ain't

see SPAGHETTI, page 10

Games & Puzzles—The Puzzle Universe

by Wei-Hwa Huang

Part I—Solutions

I was debating whether it would be better to post Part II, or to give the solutions for Part I. I decided that Techers don't have much patience and will probably forget the questions very quickly, so here are the answers (and pseudo-bibliographical references), with Part II saved for a later date.

1. Imagine four identical sheets of metal, each rotated 90 degrees relative to the previous one, super-

imposed on each other. Since the average temperature at each corner is 75° Celsius, and the center of all four sheets is at the same point, that temperature must be 75° C. From *Mathematical Quickies*, by Charles Trigg.

2. Because of symmetry condition, certain groups of vertices have the same potential and can therefore be short circuited without changing the net resistance. After doing this, the problem reduces to four parallel groups of four, twelve, twelve, and four resistors con-

nected in series. This is equivalent to four resistors of 0.25, 0.08, 0.08, and 0.25 Ω in series, making the net resistance 0.67, or 2/3 Ω. This problem is based on the old problem with a three-dimensional cube, whose resistance is 5/6 Ω. For full credit, you should have not made the same mistake that I did and assume that it was a four-dimensional hypercube.

3. Okay, here goes . . . Our example of precession will be the wheel on a string model. That is, see PUZZLES, page 9

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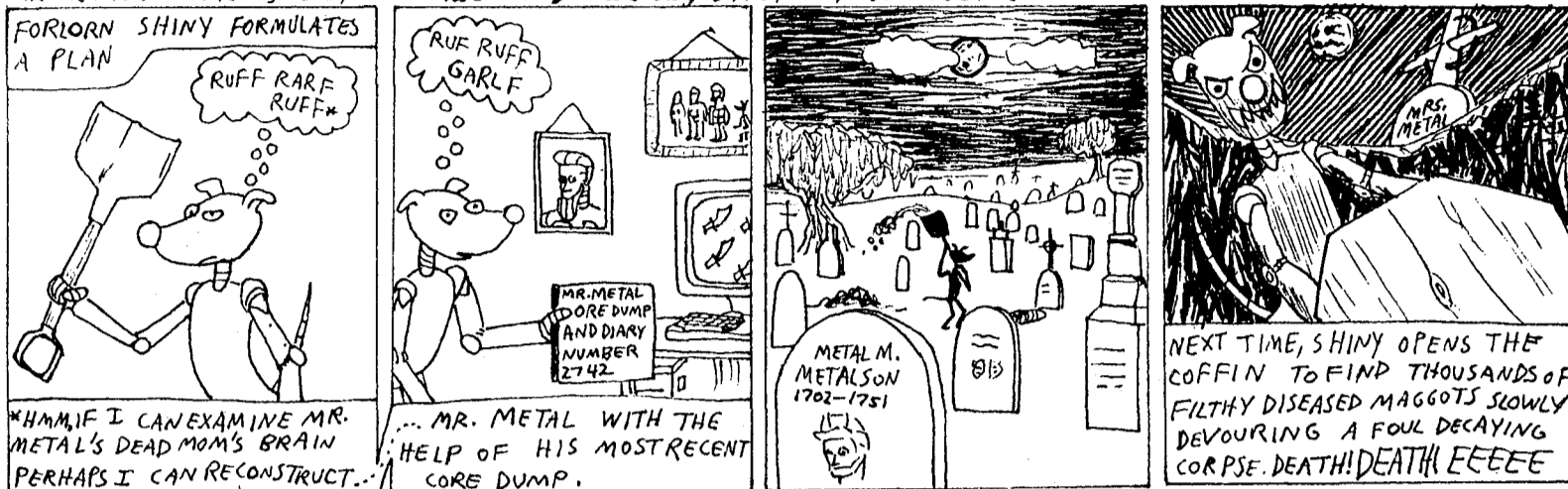
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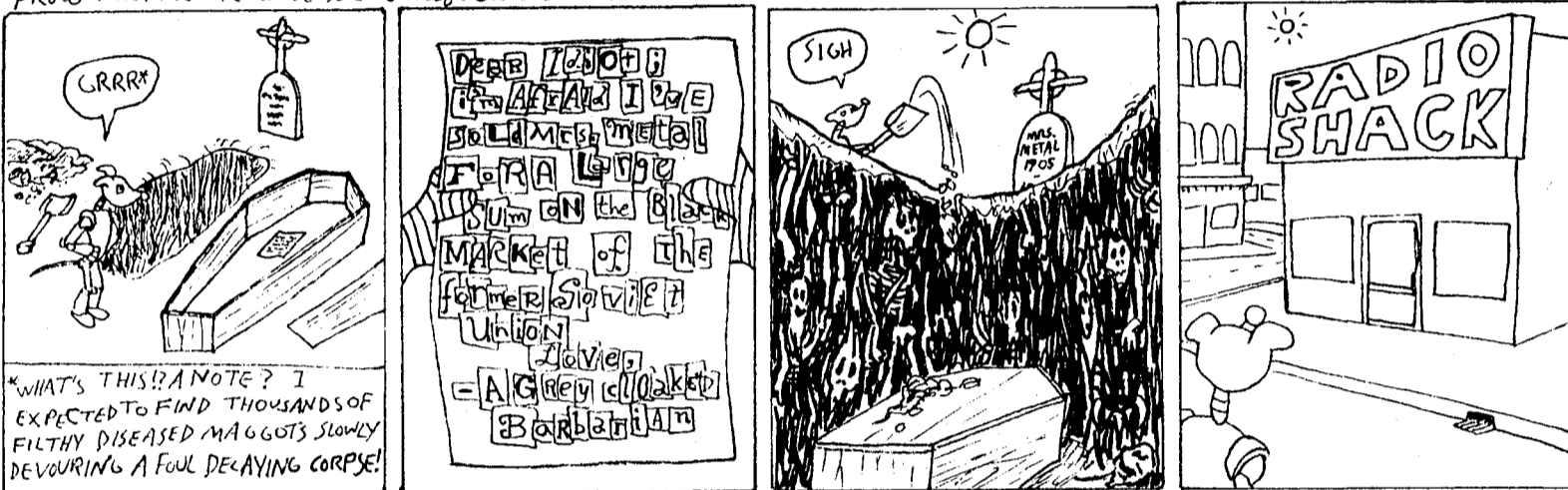
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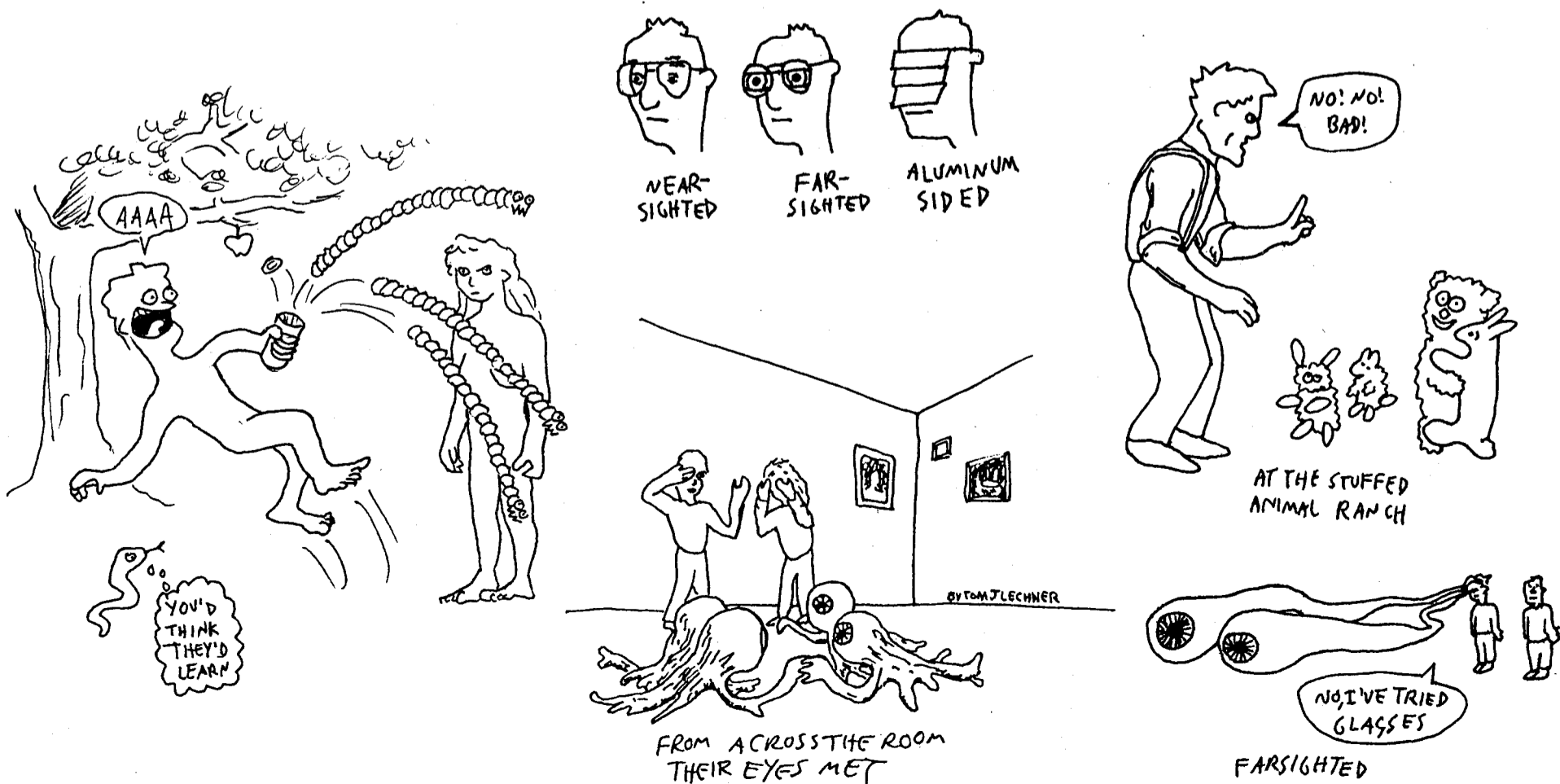
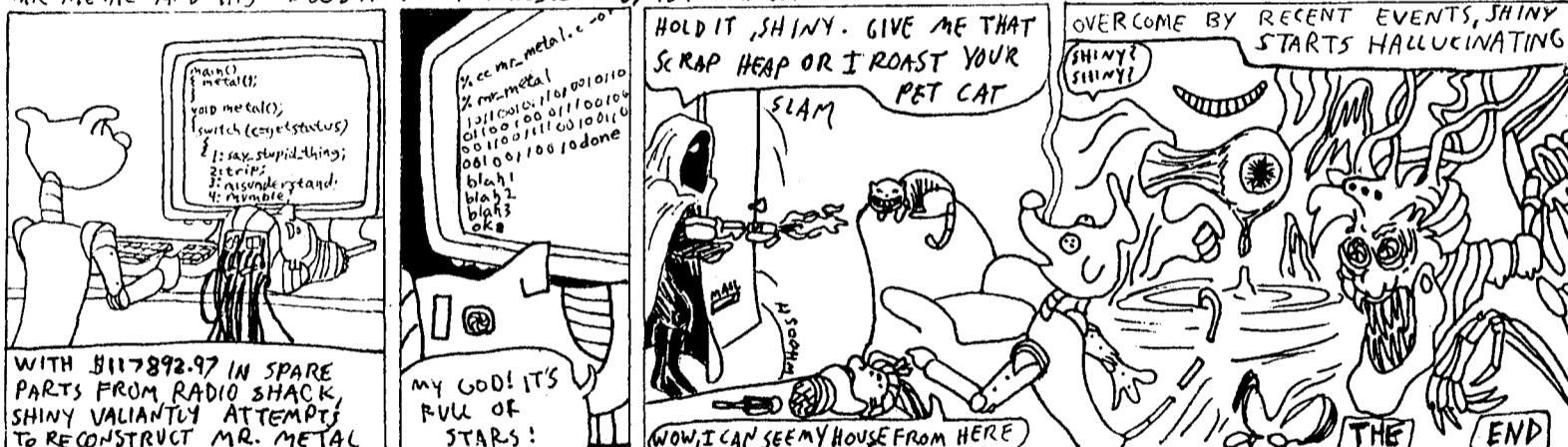
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Bridge Without Sam

by Jeff Goldsmith

One Right

Playing in a Swiss team game against questionable opposition, we are playing badly and losing. Nothing has gone right all day when I pick up the best hand I have ever been dealt.

♠ — ♥AKQ1076 ♦AQ10963 ♣A

The opponents do not leave us alone; RHO starts the auction with a weak two in spades. I can show a two-suiter with the reds by bidding 4♦, but that's not forcing and my hand is way too good for that, so I start with the only 100% forcing bid I have, 3♠. LHO raises me and partner and RHO pass, so I have to find another bid:

WEST	NORTH	EAST	SOUTH
2♠	3♠	4♠	Pass
Pass	?		

Everyone seems to be bidding spades, and with a 1-loser hand, I can do it again, so I raise to 5♠. Partner bids 6♠, and I correct to 6♦, hoping to describe a huge red two-suiter. I seem to have succeeded, because partner shrugs and bids 6♥. All pass and partner gets a play problem.

♠ —
♥AKQ1076
♦AQ10963
♣A



♠ 876
♥ 932
♦ J8
♣ KQ532

West leads a small spade and partner ruffs in dummy. Partner is feeling pretty proud of herself for working out my hand and is prone to failing to pay attention to the play after a confusing bidding sequence. Fortunately, she is happy with this dummy (who would not be?) and stops to think after West shows out on the ♥A. After duly cursing, she smiles and places the ♥10 on the table. East thinks about this for a little while and ducks, though it doesn't matter. Partner draws trumps and concedes a trick to the ♦K for +980. Everyone on the team has done well; our teammates saved in 6♠ for -500 and a ten IMP pickup.

The Caltech Bridge Club meets every Monday night at 7:15 in Winnett Lounge. Everybody is welcome; call Jeff Goldsmith at x2818 for details.



I'M A LOUD DOG!
GIVE ME A JOB!
YOU MUST OBEY
ME BECAUSE I'M LOUD!

sports

Swimming wins two against Whittier

by Some Person

Last weekend, the swim team started the season traveling to Whittier College to compete against the mighty Poets. The men's team was forced into a skeleton crew of five against a Whittier team of nine. The decision to give up the relay points and go after the individual points proved to be the turning point in the women's match.

Whittier took a large lead at the start, only to be reeled in by wins from Jennifer Ohgi in the 1000 and Virginia Leenknecht in the 200 free. When Whittier did post a first place win, Hope Chang and Lada Adamic picked up the valuable second and third place points to keep the score close. After the fifth event, Whittier still held on to a 40-24 advantage when Tamara Tulou won the uncontested 3 m diving and jumped up on the starting block to win the 100 yard butterfly. The lady Techers took their first lead in the eighth event, the 100 free, when

Ohgi won the race, Adamic placed second, and Chang swam to a fifth. Those points gave Caltech a small margin at 55-50. The lead was taken back when Whittier won the backstroke. Needing to swim back-to-back events, Leenknecht picked up a critical second and third in the 100 backstroke and the 500 free, respectively. Then two wins by Ohgi in the 500 and Tulou in the 1 m diving extended Caltech's lead to 80-68. The twelfth event saw Adamic and Chang place third and fourth in the 100 breast, which gave Caltech a slim 85-82 advantage.

Because of the restriction on the number of events an athlete can swim, Caltech did not have anyone to swim in the last event, the 200 free relay. Tension was building as the starter called the relays to the blocks, but Whittier, too, had shot their wad and didn't have anyone to swim, leaving Caltech with a dramatic team victory and a 1-0 record.

"There were so many ways to lose this meet, but the women swam hard for every point and won every close race," said an excited Coach Dodd.

The men had a much easier time taking the lead after event five and, never looking back, posted a 121-81 victory. First place was taken by Jason Hong in the 200 free and the 200 I.M., Eric Aamot in 1 m and 3 m diving, Mike Greene in the 500 free, Damian Martinez in the 100 back, and Chris Buchner in the 1000 free. Highlights included the 200 free relay squad of Aamot, Green, Buchner, and Hong posting an excellent time of 1:35.11, just four seconds off the school record.

The swimmers of the meet were Jennifer Ohgi, for her victories in three races, and Jason Hong, who set a lifetime best of 1:53.31 in the 200 freestyle and came right back to swim a solid 2:15.21 in the 200 individual medley.

Homeboy Duathlon This Sunday

by Andrew Zug

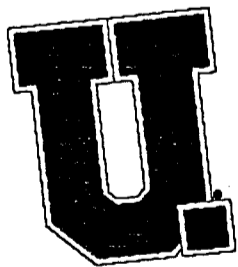
Club Homeboy, the hotbed of athletic prowess in Southern California, will hold its traditional fall Duathlon at the Rose Bowl this weekend. Due to numerous requests (two), the race organizers have changed the date from the Saturday that had been announced earlier in this paper to Sunday, December 5. The course will be the same as in past Rose Bowl duathlons and consists of a 5.5 km trail run (~3.5 miles), a 30 km bike (18.3 miles), and a 5 km run on the roads. The race is scheduled to start at 10:00 A.M., but participants should arrive around 9:30 so that they can sign in and be given race numbers. The start of the race will be at the southwest corner of the Rose Bowl parking lot at the cor-

ner of Seco Street and West Drive. Anyone requiring transportation to the Rose Bowl should meet in front of the Brown Gym at 9:00.

The rules for any Homeboy event are simple: show up, sweat a little (not really necessary) then eat and carouse. This event is completely free of charge and all members of the Caltech/JPL community are invited. Participants may do all, or part of the event, or can form a relay team with partners. The food and drink will be the usual post-race fare, including the staple of any serious athlete's diet: Rice Krispy Treats. Volunteers or spectators who help time the race or generally add to the atmosphere of the race will get all these rewards without the sweat.

This duathlon promises to be especially exciting with many great

performances expected. One of the front runners will undoubtedly be grad student and past Homeboy winner Scott May. In the past, May has been especially powerful on the bike. Nevertheless, he has his detractors, one of whom states that "Scott runs like my Grandma." Also liable to figure in the race is professor John Doyle, despite a decision by race directors that "Football toss for distance and accuracy" will not be substituted for the last 5 km run. Besides these competitors, there will be all skill levels present at this Homeboy. The essential purpose is to have an informal event that lets people try an out-of-the-ordinary sport that would normally be inaccessible or expensive (formal duathlons typically charge \$40-\$70 per entry.) For more information call Andrew Zug at 577-2772.



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ASCIT BOD Minutes November 23

by Karen Shih

Present: ASCIT BOD (minus Ewald Hueffmeier, Jr.), Jennifer Trittschuh, Dave Derkits, Trylæn, John Trittschuh, Tatsuya Murase.

New Business

- *The California Tech* requests a \$5/issue increase in the Circulation Manager's compensation for delivery to the Catalina Apartments. Motion to approve the modification to the *Tech's* compensation schedule, with a recommendation to deliver to Chester and Del Mar Apartments as well, failed. (4-0-2)

- *Wagner's Ride of the Valkyries* will be broadcasted from the Olive Walk by KKGO at 7:00 A.M. on Wednesday, December 8th.

Elections Chairman: Everything is on-track; there will be no ballot box in Mark/Braun this time.

Director for Academic Affairs

- Student Faculty Conference:

The next installment of articles is due to appear in the next *Tech*. The Director (with support from others present at the meeting) expresses concern over the *Tech* Editors' editorial modifications in recent articles.

- CLUE: Forms for reviews go out next week; contact Flora if interested in helping out with the editing. Some discussion ensues over better channeling the received opinions to the faculty; perhaps publicizing a tabulation of evaluations could expedite communications between faculty and students.

Freshman Director-at-Large

- UROH: Over 400 requests were sent out to faculty and staff; so far, over 100 positions for work during the school year/summer, or both, are available. Angie is thinking about getting the UROH published early second term so as to place jobs with workers for a reasonable part of the school year. A

suggestion was made to possibly publish two this year, one early, one later, for summer job opportunities that might have gotten left out in the earlier version.

Director for Social Activities: ASCIT/GSC Party is Saturday, January 8th, 1994 at Winnett. More info later.

Secretary: Motion to approve Minutes from 11/9 and 11/6 meetings passes. (7-0-0)

President

- Breakfast with President Everhart: For those who attended, it was a very constructive and informative talk. This might become a regular affair. Look for sign-ups at the DRL/MOSH's Office.

- Next week's meeting will be the last of the term.

- ASCIT Van Bike Rack: Gisela will talk to Physical Plant about where to store it.

ASCIT BOD Minutes November 30

by Karen Shih

Present: ASCIT BOD, Jennifer Trittschuh, Dave Derkits, Brett Warneke, Christian Waite, Chuck Waite, Becky Green, Tatsuya Murase

New Business

- *The California Tech* requests approval of salaries for Editors and Business Manager for the past four issues. Motion to approve the salaries passes. (6-0-0; Asif and Anandi are late).

- Breakfast on the Olive Walk with *Wagner's Ride of the Valkyries*—TFM will cater for \$110. Approximately 20 people will be in attendance. Motion to pick up ~1/3 of the cost (\$40) passes. (5-0-1; see above).

- The Caltech Y requests retroactive co-sponsorship of Broomball. The event was \$1000, request is for \$300. Discussion centers around the unfair sign-up process of teams, lack of ice time to finish the tournament, controversial referee calls, etc. Overall, there is a general discontent over the entire event. All those who wish to voice their displeasure are encouraged to attend the next Caltech Y ExComm Meeting on Monday, December 6th, 1993, at noon, in the Y Lounge. Motion to co-sponsor as requested fails (3-3-2). To encourage those who abstained to cast a yea or nay vote, more discussion takes place. After some arm-twisting, the same motion is called again, and the motion passes, (5-4-0). In the future, the BOD will not grant requests for retroactive funding.

Old Business

- *The California Tech* requests a \$5/issue increase in compensation for delivery to the Catalina Apartments. Some concern was expressed over the ratio of the proposed increase to the original compensation as it relates to the amount of added work. Motion to approve the modification to the *Tech's* compensation schedule fails, (4-2-0). Anandi comes in later, recalls the discussion and remakes the original motion, which now passes. (5-1-1).

Election Chairman: Bylaw election—both proposals passed with over 80% approval. Next term's election schedule is submitted for review.

Director for Academic Affairs

- CLUE Reviews have been sent out—hard copies are to go to Flora Ho at MSC 217, e-mail reviews, to epc@cco.

- Student Faculty Conference—everything is going well; the second *Tech* article will appear this Friday. Thanks to the chairpersons of the subcommittees for keeping everyone up to date.

Freshman Director-at-Large

- UROH—response has been very good. The book(s) will be awesome this year. Flora, Gisela, and Karen will attend the 12/13 Faculty Board Meeting to encourage faculty response.

Upperclassman Director-at-Large: The old van will be going on sale soon, in one form or another.

Director for Social Activities: The ASCIT/ GSC Party has been changed to January 15th instead of January 8th so that skiers from Ruddock and Lloyd can partake in the festivities. It will be at Winnett Center, complete with a DJ and band.

Secretary: Sign-ups for Publications Darkroom Chairman will come down on January 4th, 1993 and the interview will be conducted at the meeting that night.

IHC Chair

- UASH and the Grievance Committee are short of one member each. Sign-ups and interviews will take place early next term.

- House pay phones will be replaced by campus extensions soon. This makes \$25,000 available in the Housing budget; perhaps a change machine in the North House Laundry Room?

Executive Committee Chair: No formal protest has been filed regarding Monday's election; however, it was brought to the BOD's

attention that in this election to amend BOC bylaws which affect all undergraduates, including non-ASCIT members, only ASCIT members were allowed to vote. discussion is tabled until next term.

The next meeting of the ASCIT Board of Directors will be January 4th, 1994, at 10:30 P.M. in the MOSH's Office.

continued from page 5

Puzzles

you have a spinning wheel with a protruding axle, which is suspended in place by a string. When the wheel is spinning, the axle tends to rotate around, twisting the spring. In particular, if the wheel were rotating counterclockwise, the axle would go towards the right, and back, and left, and forward, etc. And this is what we will try to explain. Now, if the wheel wasn't spinning, then it would have a tendency to fall over, right? You can test this yourself by taking a flat disk, put it on its edge, and let go. Flop. In this case, if we hold the stationary wheel to the left of the string, it will drop down. So the effect of gravity on this wheel is to pull the top of the wheel leftward and the bottom of the wheel rightward. Now let's start the wheel in motion (counterclockwise). Look at the section of wheel closest to you. It has just gone through the bottom half, so gravity has been pushing it right for a while. The section of wheel farthest away from you has just been rotated through the top of the wheel, so it's being forced to the left. And the effect? The back of the wheel is pushed left, the front of the wheel is pushed right, and the wheel precesses! From *The Cartoon Guide to Physics*, by Gonick and Huffman.

5. Quite simple: Turn the jar upside down so that the egg covers the lip, put your mouth so that it covers the lip, and blow. The re-

sulting compressed air pushes the egg out. The egg gets pushed into your mouth, so the jar had better be clean! I was told this by an old physics teacher.

6. Issac Newton would have dismissed the first case entirely. Unfortunately, Newton would probably have dismissed relativity also. The common thought nowadays is just to say that negative mass cannot exist! In fact, antimatter apparently has positive mass. (One way to convince yourself of this is to imagine a particle and its antiparticle colliding to form energy. If antimatter had negative mass, then the total mass would stay constant at zero, and so energy would be generated out of nothing.) From "Relativity for the Million" by Gardner.

7. Consider just two of the four people, A and B where B is walking towards A. Since at all times the four form a square, A is always walking orthogonally to the direction B is walking. So A's walking has no effect on his relation to B at all, and so we might as well assume that A is standing still and B is walking towards him. In 5 minutes B can walk 900 meters, so the size of the room is 0.9 km by 0.9 km. (Large room!) This is a common math puzzle found in several places.

Anything you'd like to see in this column? Send your suggestions, comments, ideas to Wei-Hwa Huang, MSC 542. Or, call x1540 and leave a message, or e-mail to whuang@cco.

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continued from page 3

World News

United Kingdom

A British official released a message showing that the British government has had secret talks with the Irish Republican Army (I.R.A.). Prime Minister British Prime Minister John Major and North Ireland Secretary Patrick Mayhew defended the talks as useful for promoting peace, and said that the talks would continue. Leaders of the Democratic Union Party called for Major and Sir Patrick to resign. John Major and his party had previously said that they would not enter discussions with the I.R.A.

Former U.S. President George Bush was made a Knight of the Grand Cross of the Most Honorable Order of the Bath, which is the highest honorary rank a foreigner may receive in Britain. Former Presidents Eisenhower and Reagan are the only other U.S. Presidents to have been knighted in Britain.

United States

The Senate approved the Brady Bill, which requires those buying handguns to wait five days while the police perform background checks—convicted felons, minors, drug addicts and illegal immigrants would not be allowed to buy handguns. The bill also allocates funds to help states improve their computer background check systems and increase fees for federal firearms. The Republicans dropped their filibuster after Democrats promised them a vote in the next session dealing with some Republican objections to the bill.

President Clinton signed the Brady Bill.

President Clinton met with Salman Rushdie, author of *The Satanic Verses*, a book which many Muslims find blasphemous. Iranians have put a death decree on him for his book, and there is currently a \$3 million bounty on him. Clinton and Administration officials said that the meeting was planned to demonstrate the current

Administration's opposition to intolerance and was not intended to be disrespectful towards Muslims. When Bush was President he refused to see Rushdie, fearing it would upset Muslim leaders.

Dr. Jack Kevorkian was arrested for violating Michigan's law banning assisted suicide. The judge set a \$50,000 cash bond. Kevorkian has threatened to go on a hunger strike while in jail.

Yemen

Haynes Mahoney III, director of the U.S. Information Service in the Yemeni capital of Sana, was kidnapped by Yemeni tribespeople, and was released after the Yemen government agreed to meet the demands of the kidnappers. The demands included back salaries for a number of tribesmen who were fired from government jobs and an economic development plan for the tribe's region. The U.S. State Department said that it could not confirm the release.

continued from page 5

Spaghetti

It Fun," by The Dead Boys. A rendition of The Misfits' "Attitude." The Sex Pistols' "Black Leather." "You Can't Put Your Arms Around a Memory," by Johnny Thunders. And there's a bonus track tagged on to the end of Fear's "I Don't Care About You." We haven't figured out what it is yet.

It sounds like G'N'R had a really good time in the studio putting all this stuff together. There's a kind of familiar friendliness in the attitude, as if you were in the studio singing along with the band (although I'd be damned if I could hear you.)

P.S. Be careful if you try to buy this. It's not "in" to like Guns 'N' Roses any more.

P.P.S. Is Metallica's new release really lame or what? A "Scary Guy" Stencil? Fuck you.

"You can't print that!"

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Events & Notices

the 1994-95 school year to one junior and one senior undergraduate student. Successful recipients must be enrolled in a civil engineering program, or in a related field as determined by ASDSO, and must demonstrate an interest in pursuing a career in hydraulics, hydrology, or geo-technical disciplines, or in another discipline related to the design, construction, and operation of dams. Also, a GPA of 3.0 is required. Applications must be received by ASDSO no later than January 30, 1994. Announcement of successful candidates will be made in the spring of 1994.

Applications for the following fellowships are available from Lauren Stolper, Fellowship Advisor. Please drop by her office in Lloyd House in the International Student Programs Office or call x2150 to have an application sent to you or to ask a question.

The Department of Defense National Defense Science and Engineering Graduate Fellowship Program (NDSEG) supports those who will be entering or are at the beginning of doctoral level study in one of the following fields: aeronautical/astronautical engineering, biosciences, chemical engineering, cognitive/neural/behavioral sciences, computer science, electrical engineering, geosciences, industrial engineering, materials science/engineering, math, mechanical engineering, naval architecture and ocean engineering, oceanography, physics. Applicants must be U.S. citizens. Awards are made for up to 36 months of study. January 19 deadline.

The Office of Naval Research Fellowship is part of the DOD packet described above. ONR fellowships are limited to U.S. citizens who have not yet started graduate school. Doctoral study in the following areas will be supported: electrical engineering, math, physics, chemistry, computer science, materials science, engineering mechanics, biological & biomedical sciences, cognitive & neural sciences, naval architecture & ocean engineering, and oceanography. January 19 deadline.

The U.S. Air Force Laboratory Graduate Fellowship Program is also included in the DOD packet or a separate application form can be used. Applicants must be U.S. citizens who will have earned a B.A./B.S. by September of 1994 and have not as yet begun graduate school. Up to 36 months of doctoral study within up to 5 consecutive years may be supported. Study in the following disciplines will be supported: aeronautical/astronautical engineering, behavioral sciences, biomedical engineering, chemistry and chemical engineering, computer science & modeling, electrical engineering, geophysics and meteorology, industrial & civil engineering, life sciences, biology & biophysics, materials science, ceramic engineering & metallurgy, math, mechanical engineering, and physics. January 19 deadline.

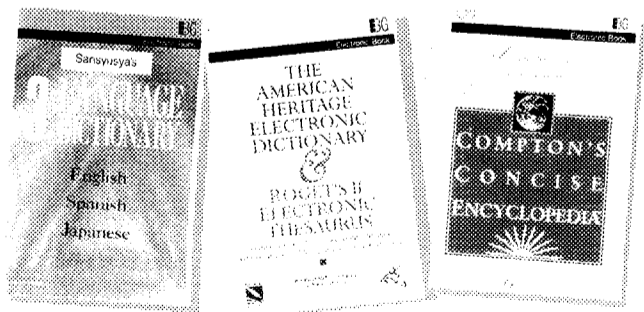
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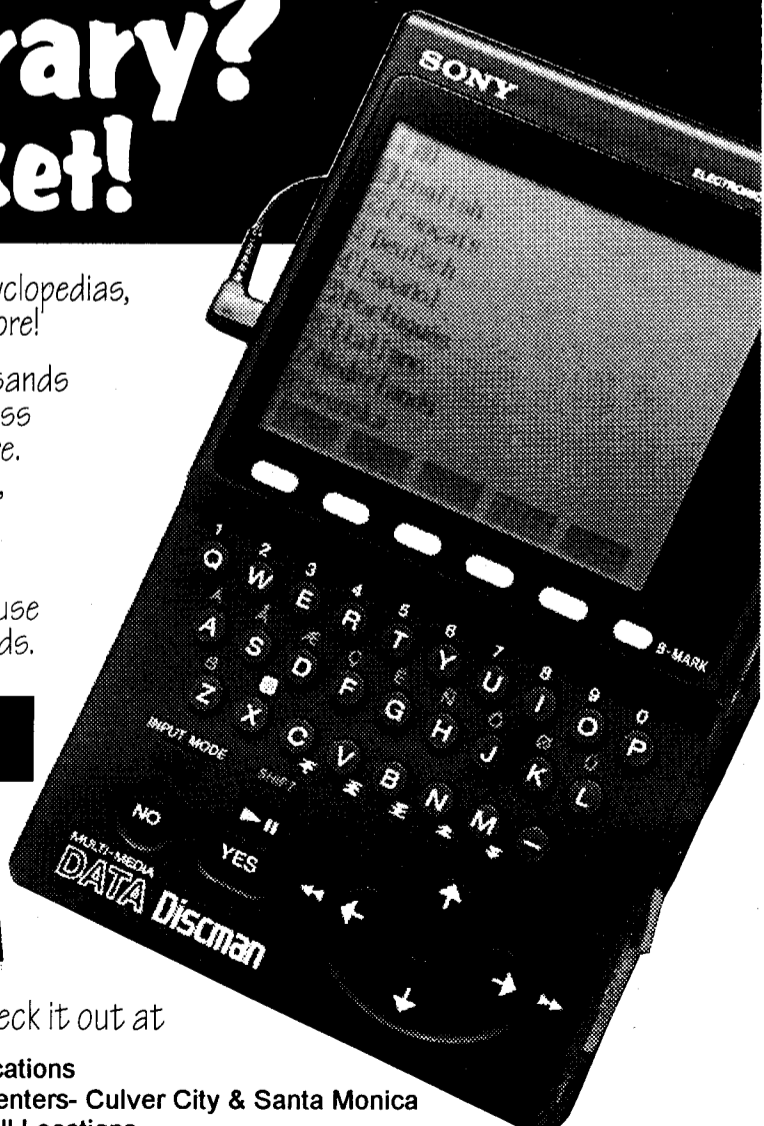
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The Nuclear Regulatory Commission Graduate Fellowship Program—The NRC fellowship supports advanced study and practical work experience in health physics, nuclear engineering, instrumentation/control systems, materials science/engineering, metallurgy, and artificial intelligence and expert systems for use in human factors. Participants must work at NRC for at least 9 months prior to beginning their fellowship and must for 4 years following the completion of a 2 year Master's program. The application deadline is January 21.

The Rotary Scholarship primarily funds one year of graduate or undergraduate study abroad. Applicants must be at least juniors to apply. (Juniors would go abroad the fall following their senior year or spring if applying to a Southern Hemisphere country.) International students may apply but may not study in the U.S. if applying through the Pasadena Club or in their own country of citizenship. Applicants may apply to any country having a Rotary Club in it. This covers most countries. Some notable exceptions are Cuba, Bosnia, and Mainland China. Applicants most come from a country that has a Rotary Club. Applicants may not be Rotary members or employees or immediate relatives of such. Awards for the 1995-96 year will be worth over \$20,000 plus round-trip travel. Applicants must be able to speak at the intermediate level at least the language of their proposed host country. The application deadline is February 1 and all materials should be submitted to Lauren Stolper, Rotary Scholarship Advisor.

Work Abroad—The Council on International Educational Exchange (CIEE) can help students attending college full time in the U.S. to set up work permits in Ireland, France, Britain, Germany, New Zealand, Canada or Costa Rica. A fee of \$160 is charged to set up your permit. (This may seem steep, but it is well worth it.) You can prearrange a job in advance, for example go

through faculty contacts to get a research position abroad) or use the job listings when you reach your destination. You must speak the host country's language at the intermediate level for France, Germany, and Costa Rica. Depending on the country you may work for the summer or for up to six months. All countries allow the summer work option.

International Work Camps—The Council on International Educational Exchange can help you locate one or more work camp experiences in one or more of 22 countries throughout the world and including the U.S. You'll receive room and board in exchange for 30 to 40 hours of work per week.

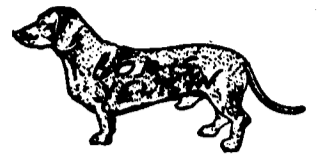
Work camps usually bring 10 to 20 volunteers together to work for 2 to 4 weeks on a community or environmental project.

Monticello Foundation/Noland Internships 1994—The Deans' Office is accepting proposals for the Monticello Foundation Internship and the Robert and Delpha Noland Summer Internships. Three Caltech undergraduate women (current freshmen, sophomores and juniors) will be given an opportunity to participate in research projects outside the Caltech community for ten weeks during the summer. Each student will receive a \$3,500 stipend. Applicants are required to identify the projects in which they wish to

participate. All arrangements with the principal researcher will be the responsibility of the student. Interested? Identify a sponsor for your experience at a research facility for a ten-week period. In a short essay, describe your project, and submit it to the Deans' Office, 102 Parsons-Gates, along with two faculty recommendations. Proposals are due March 4, 1994.

Campbell Biology Prize—A First Prize scholarship of \$1500 will be awarded to an outstanding student intending to teach biology at the high school level. A Second Prize of \$1000 and a Third Prize of \$500 will also be awarded. The competition is open to all undergraduate students. You


need to write an essay characterizing the one teacher who most inspired your interest in teaching biology. Entries must be postmarked by February 28, 1994. Prizes will be awarded in May, 1994; winners will be notified by mail. For further instructions come to the Deans' Office, 102 Parsons-Gates.






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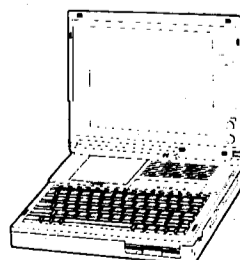
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RATES \$4.00 for first 30 words; . . . 10¢ for each additional word. Send written ad with payment to 40-58. Deadline is 6 p.m., Monday before issue. No charge for on-campus lost & found.

* Note: asterisks denote new announcements.

Notices

* The Big T is cleaning its shelves. If you would like back issues of Caltech's yearbook, we have copies from the 1950s to 1993 for \$30/copy (sorry, we can't guarantee that we have every year). Send your name and mailing address with a check to the Big T, Caltech MC 27-58, Pasadena, CA, 91125, or call (818) 395-2183.

* It's time to think about Senior Pictures for the Big T. They will be due Feb. 1 to the Big T, MC 27-58, so don't put it off much longer. Questions should be directed to Christy Esau, christy@cco, or Nestor Ocampo, no@cco.

* There will be ballroom dance lessons in Ricketts courtyard tonight, December 3. Lessons will be given in Cha-Cha and Foxtrot from 7:00 P.M.-8:30 P.M. These lessons have been postponed from two weeks ago.

The Caltech Anime Society will have showings on Friday, December 3 and Saturday December 4 in a variety of locations TBD. Showings will include *Dominion* #1-4. For more information, contact Roy Jones at Ricketts Rm. 45, MSC #673, or rjones@cco.caltech.edu.

Events & Services

* Swedish Lucia celebration will be held at 204 S. Holliston #11 on December 12 at 3:30 P.M., sponsored by the Caltech Swedish Club. Anyone interested in Scandinavian culture or in speaking Swedish is welcome. For more information, please contact Lena Peterson (lena@pcmp) x6994, or Rustan or India Leino (rustan@cs) 584-7162.

* Food and Clothing Drive—It's that holiday time of the year again! Open line and the Caltech Women's Center are sponsoring a collection of food (non-perishable) and clothing for distribution to those in need. Please bring your donations to the collection bin at the south end of the second floor balcony of Winnett Center. Items will be distributed to local charitable organizations.

* Baroque Bach—The Caltech Glee Club presents its annual holiday concert, Baroque Bach. Cantata No. 191 Gloria in Excelsis Deo. The concert will include an all-professional orchestra and period instruments. Friday December 3 and Saturday December 4, each at 8:00 P.M. Dabney Lounge, Caltech. Tickets are \$8 general and \$5 student. For further information, call 395-4652.

* Caltech's Second Annual Messiah Sing-Along—This presentation will be conducted by Dr. Donald Caldwell and will feature Wendy Caldwell on the piano. Friday December 10, noon-1 P.M. in Dabney Lounge. Scores provided or bring your own. There will be a reception following.

The Career Development Center needs two student workers for winter and spring terms 1994. Students should be able to work at least 6 hours per week, have general computer knowledge, and have typing/data entry skills. Salary range: \$6.50-\$7.50. For more info, call Amy Malak at x6361 by December 3.

Museum of Tolerance—A guided tour of the Museum of Tolerance will be offered on December 9th. A special photographic exhibition *Faces of Sorrow—Agony in the Former Yugoslavia* will be presented along with exhibits showing the Holocaust and the struggle for civil rights in America. The tour is open to the entire Caltech community, but the number of available tickets is limited. For more information stop by the International Student Programs Office or call x6330.

Author and Caltech alumnus David Brin will discuss his most recent novel, *Glory Season*, at

Events and Notices

the annual FOCAL dinner on December 13th at the Ath. Brin will autograph books during a social hour at 6. Reservations are \$45 for FOCAL members, \$55 all others. Call Gloria Thomas, x6411.

Caltech Alpine Club "Sit and Chat"—Bring a sack lunch to the patio outside the north end of Keck Laboratory on Wednesdays from 12 to 1. Talk about mountains, the weather, and outings, past and future.

Caltech Velo—The Caltech Bicycle Club will meet Wednesday, December 8 at noon in room Winnett Lounge. The club organizes all types of rides, both road and off-road rides, for all skill levels, from novice to advanced, including collegiate racing. All cyclists are welcome. We lead the following weekly rides, all meet in front of Winnett Lounge:

- Tuesday, 11:30 A.M.: 10 to 15 easy miles
 - Wednesday, afternoon: off-road ride, times vary
 - Friday, 8:00 A.M.: women only road ride
 - Saturday, 10:00 A.M.: off-road ride
- Rides leave at the time listed, so please arrive a few minutes early. For more information, contact Michael Kantner at x4882 or e-mail to cycling@cco.caltech.edu

The Caltech Gay/Lesbian/Bisexual Support Group meets the first and third Tuesdays of each month in the Health Center Lounge. This confidential meeting is open to all Caltech community members looking for a supportive context in which to address questions and concerns about sexual orientation including coming out, being out, self-discovery, coping with families... We begin with a focus topic but move to whatever is feeling most relevant to the group that night. Refreshments are served. For information, call 395-8331.

Adult Children of Alcoholics—this 12-step group meets on campus each Tuesday from noon to 1 in Spalding Lab room 113. The group is open to any member of the Caltech community who grew up with family alcoholism or other problems. For more information call Dinah Lee Schaller at 395-2961 or 395-8331.

The 5th annual Posada Walk for AIDS Assistance will be held in Pasadena on Saturday, December 4th from 5:00-6:30. The walk is 1.9 miles and will feature performing groups and the famous Living Quilt. To register or for more information contact All Saints AIDS Service Center's Posada hotline at 796-5830.

Friday Prayer—Prayers organized by Caltech Muslim Students are held in the Caltech Y lounge at 12:15 P.M. every Friday.

Mass—Catholic campus life includes Mass on Sunday at 10 A.M. (Winnett Lounge) and on Thursday at 8:15 A.M. (Y Lounge), Rosary at 11:15 A.M. daily in Winnett LA, and various spiritual development groups and study circles. For more information contact Fr. Brian Wilson at x6212.

Bible Study and Discussion—Every Wednesday at noon in the Y lounge. Bring your own lunch. For more information call Mike Gerfen at x4886.

OpenLine—A group made up of students, staff, and faculty from many different departments on campus, and from a variety of ethnic and cultural backgrounds. We are both an action group and a discussion group. Our agenda is very flexible and is solely determined by what people in the group suggest. Drop by any meeting and say hello! We meet from noon to 1 P.M. on Tuesdays in the Y Lounge (2nd floor Winnett, feel free to bring your lunch!). Remember, we always welcome new people, at any time of the year. Hope to see

some time! For more information contact Gary Mines at x6542 (gam@zhmmedia.caltech.edu).

Baby Furniture Pool—The Caltech Service League loans out baby furniture to students and postdocs on Wednesday at 324 S. Chester from 10 to 11 A.M. For more information, call 952-1631.

Israeli Folk Dancing—Sundays in Winnett lounge. Beginning instruction starts at 7:30 P.M., intermediate at 8:00 and open dancing goes on from 8:30 to 10:30. For information call Nancy Macmillan at 795-3655. Admission is \$2.00.

Scottish Country Dancing—On Wednesdays in Dabney Lounge from 8 until 10 P.M. Beginners are welcome and no partners are needed. For more information call David Hills at 354-8741.

Music with James Boyk—Pianist James Boyk gives a performance each Wednesday from 4:30 to 6 P.M. in Dabney Lounge. The performance is open to the public and free of charge. Feel free to come late or just skulk. For more information call x6353.

Open House—The office of International Student Programs (ISP) would like to invite international students, scholars, and the Caltech community to coffee, tea, and conversation every Wednesday from 4-6 P.M. Take a break and relax with friends at ISP (Lloyd House on the Olive Walk).

Scholarships, Internships, & Competitions

* The National Research Council will award Ford Foundation Postdoctoral Fellowships for Minorities. There will be about 25 awards sponsored by The Ford Foundation. The competition is open to scientists, engineers, and scholars in the humanities who are citizens of the United States, members of a designated minority group, and are preparing for or already engaged in college or university teaching, and who hold the Ph.D. or Sc.D. degree. Fellowships will be of one year duration, and will be made in the behavioral and social sciences, humanities, engineering, mathematics, physical sciences, and biological sciences, or for interdisciplinary programs composed of two or more of the above disciplines. Awards will not be made in professions or areas such as fine arts, education and similar fields. The fellowship provides postdoctoral research experience at a non-profit research or higher educational institution of the Fellow's choice. *Deadline for submission is January 7, 1994.* Info: Fellowship Office, National Research Council, 2101 Constitution Avenue, Washington, D.C. 20418.

* The DuPont 1994 Plunkett Student Awards for Innovation with Teflon®—These awards will go to the best examples of student innovation in fluoropolymer technology, with total prizes and scholarships of more than \$30,000. Winning entries must demonstrate both innovation and potential for commercialization that can open or expand markets for fluoropolymers. Students are required to submit a prototype, or a paper on a reducible-to-practice application, both with supporting information, using either Teflon® or Tefzel® fluoropolymer resins. The first place winner will be offered an option: a summer internship, valued at approximately \$10,000 in DuPont Fluoropolymers, or a \$3,000 cash award. Second and third place awards will be \$2,000 and \$1,000, respectively. Ten honorable mentions will receive cash honorariums. Additional money will also be given to faculty sponsors, schools, and customer fabricator advisors. Teams or students

may enter, and faculty sponsorship is required. The deadline for submitting entries is January 14, 1994. Call (800) 432-7536, or write The DuPont Plunkett Student Awards, Suite 550, 400 North Capitol Street, N.W., Washington, D.C., 20001.

* Fritz B. Burns Prize in Geology in the Division of Geological and Planetary Sciences, California Institute of Technology—Undergraduates in the Division of Geological and Planetary Sciences are encouraged to apply for the Fritz B. Burns Prize in Geology. The award(s) will be made for amounts up to \$1,500 for the best proposals for undergraduate research in the fields represented by the Division. If you are interested in this opportunity, please write a short statement (less than one page) describing the research you would like to do. Selections will be made in January 1994. The proposed research can be loosely or closely tied to that of a Division faculty member. *Submission deadline: January 14, 1994.* Send proposals to: PROFESSOR KERRY SIEH, Divisional Academic Officer, Division of Geological and Planetary Sciences, Mail Stop 252-21.

Visit China—The Durfee Foundation invites Caltech students, staff, faculty, and recent alumni (those who have earned degrees in the last seven years) to apply for funds to support up to a year of travel, study, or exploration in China. Proposals that reflect a personal interest and vision related to China will be accepted between now and June 1995. The program is looking for projects in the range of \$3,000 to \$20,000 which will run no longer than one year. For further information and a brochure, contact Caltech's Office of Foundation Relations (x3969).

For information on the following scholarships, please contact the individuals listed at the end of each scholarship.

United States Department of Energy: Integrated Manufacturing Pre-doctoral Fellowships—The United States DOE is offering twelve three-year fellowships for study toward the Ph.D. degree. Eligibility is limited to citizens, nationals, and permanent resident aliens of the United States, who will have received a master's degree by the fall of 1994, but evidence of equivalent post-baccalaureate professional industrial experience may be offered by the applicant in lieu of the master's degree. There is a stipend of \$20,000 per year, and up to \$15,000 per year will be provided toward tuition and fees. Selection is merit based. Contact: Fellowship Office, National Research Council, 2101 Constitution Avenue, Washington, D.C. 20418, or call (202) 334-2872. Initial application date is November 5, 1993.

The Financial Aid Office has applications and/or information on the following scholarships. All qualified students are encouraged to apply. Our office is located at 515 S. Wilson, second floor.

* The College Women's Club of Pasadena is offering scholarships for the 1994-95 academic year. Applicants must be full time students and

have a GPA of 3.0 or above. To apply, please submit a completed application form; one-page, typed, personal essay; transcript of college work to date including current course commitments; and three recommendations, preferably from professors familiar with a student's aspirations and achievements. Completed application packets must be returned to the Financial Aid Office on or before February 4, 1994.

* SPIE—The International Society for Optical Engineering is once again offering scholarships for 1994. Applications may be made for the funding of any activity in the field of optics. They will be judged on the basis of the long range contribution which the granting of the award would make to optics and optical engineering. Awards will not be made on the basis of need. Applications must be received at SPIE Headquarters by April 1, 1994.

The annual Mensa Scholarship Essay Contest is here again. The essay should present clearly and concisely the applicant's academic vocational and career goals. The only requirement is that the student be enrolled at an accredited college/university for the 1994-95 award year. All entries must be postmarked on or before January 31, 1994.

The Korean American Scholarship Foundation is offering two scholarships of \$10,000 each and over 20 scholarships of \$1,000 or higher. Applicants must be full time students of Korean heritage. Applications are available upon written request from KASF Western Region Office, 4424 Dulcinea Court, Woodland Hills, CA 91364. Completed applications must be received by January 31, 1994.

The Society of Women Engineers is seeking qualified applicants for thirty-six scholarships varying in amounts from \$1,000 to \$4,000. Applications and supporting documents must be postmarked no later than February 1, 1994.

* The Glamour Magazine's 1994 Top Ten College Women Competition has begun. The competition is open to all women who are full-time juniors regardless of major or GPA. All entries must be postmarked by January 31, 1994.

The American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc. is announcing its Grant-in-Aid program. To be eligible for the program an applicant must be a full-time engineering student in the final two years of undergraduate study and have a cumulative grade point average 3.25 or above. The Grant is intended to encourage the student to prepare for service in the HVAC&R industry, and to stimulate his/her interest in research. Applications must be received at ASHRAE Headquarters by December 15, 1993, to be considered. Applicants will be notified of the results by April 1, 1994.

The Association of State Dam Safety Officials, Inc. (ASDSO) is offering two scholarships, in the amount of \$2500 each, to be awarded for

Because of the large number of announcements this week, the Events and Notices section is continued on pages 10 and 11.



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