

*Don't Do Your
Midterms,
Frosh....*

The California TECH

*Work for the
Tech!*

Volume XCVII, Number 16

Pasadena, California

Friday, February 9, 1996

Caltech Core Curriculum Committee Submits Report

by Stephanie Haussmann
and Alison Slemp

As seniors we have heard talk about core curriculum changes for over three years now, and finally, for next year's freshman class these changes will be a reality. Changing something as fundamental to our Caltech experience as the core is a scary proposition. A major fear has been the prospect that the core will somehow be watered down or perhaps that whatever changes are made will be done more or less arbitrarily. In light of these concerns we are very glad to have been part of the committee that has met every week since first term to oversee the details of the proposed core changes. Student-faculty committee involvement on this issues

spans every level from philosophical ideas about what the core should be to the minute details of weekly class syllabi, potential teaching material and instructors, as well as the ever-so-important wording of the catalog. The bottom line is that a lot of people have put considerable effort into the proposal for core curriculum changes that will be decided on at the February 19th faculty board meeting. After participating first hand, we can honestly say this effort has been made by constantly in mind keeping the students who will have to take the core. What has also been fundamental to these discussions is the desire to preserve the positive aspects of the current core while adding diversity and a modern approach that we only wish we had the chance to experience for our-

selves.

The following summary *only briefly describes* the major changes proposed for the core. We are very interested in student feedback to these changes and encourage everyone to read the complete report (in all its excruciating detail) which can be found on the web at <http://www.ugcs.caltech.edu/~blacker/core.html>. In addition, the student members of the committee and the house presidents have copies of the complete report for your viewing. This is a very important issue that will affect all future Techers and we hope you will take the time to look at these materials and give the proposed changes some thought. Please direct any comments, questions, or concerns to us either in person or via phone/e-mail.

Thanks!
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Neil Jones (Ricketts 51, njones@cco)
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adamm@ugcs)

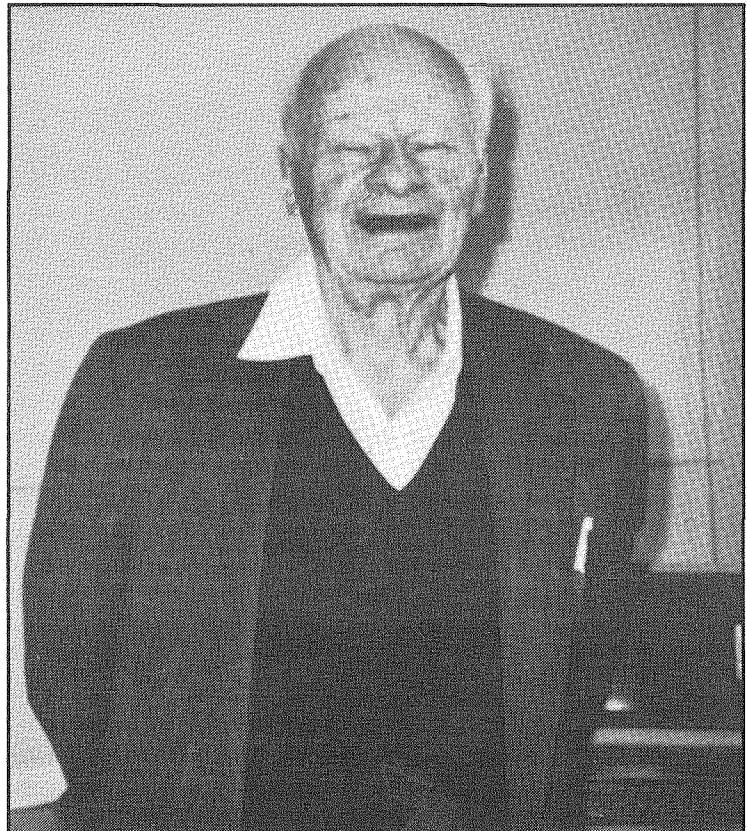
SEE REPORT SUMMARY ON PAGE 3

Nobel Laureate Speaks on Physics of Supernovae

by Joseph Trela

Hans Bethe, the Nobel Laureate in Physics of 1967 and one of the world's most distinguished scientists, spoke last Friday in the 201 East Bridge auditorium to a packed house. He is currently a professor emeritus in physics at Cornell University in Ithaca, New York, but due to a sensible regard for subzero temperatures he usually spends at least one of the winter months in a sabbatical at Caltech. The speech, which was technically a slightly displaced part of the Thursday afternoon series of physics meetings, capped off his stay for this year and dealt with the problems of calculating the shockwave generated by a supernova during the first seconds of its eruption.

Hans Bethe was born in Germany in 1906 in the contested Alsace-Lorraine province. He entered the University of Frankfurt in 1924, where his research topics included the first evidence that electrons could demonstrate wave-like attributes such as diffraction patterns; he passed his doctoral examination in 1928. During this period, he also made contributions to the solid-state theory of metals. But in 1933, he was forced out of his research position due to his Jewish ancestry when racial laws were passed by the Nazis, and he had to emigrate with



Hans Bethe spoke at Caltech last Friday

his wife to England, where he worked at Cambridge University.

In 1935 he accepted an assistant professorship at Cornell. There, in 1938 he produced his most famous work; that on hydrogen fusion, the power source that drives the sun and all other mature stars. It had been assumed for some time that the fusion of atomic nuclei in the sun's core produced the necessary power, but it was uncertain which elements were involved. Bethe was able to calculate that

the net fusion of four hydrogen atoms into one helium atom and excess positrons (which eventually annihilate electrons to produce gamma rays), neutrinos and gamma rays could provide sufficient energy for the Sun at its core temperature and luminosity. In addition, he found that a different reaction known as the CNO cycle (for the carbon, nitrogen and oxygen atoms used as catalysts) could

SEE BETHE ON PAGE 6

Mellon Grant Extends Caltech's Science, Ethics, & Public Policy Program

by Media Relations

Caltech has received a grant of \$425,000 from the Andrew W. Mellon Foundation for support of education and research in science and society through Caltech's Science, Ethics, and Public Policy (SEPP) Program. The grant, which began this fall, will support the program for the next three years.

"This program is very popular with our students and helps them to look at science and technology from a different perspective," said Thomas E. Everhart, president of Caltech. "There have been few programs during my tenure here at Caltech that have such broad appeal across campus, and certainly there is no question about the timeliness of such studies, given the changes occurring in the wider community. We are very grateful to the Mellon Foundation for their continued support of this valuable program."

SEPP activities include an undergraduate major and both graduate and undergraduate minors in Science, Ethics, and Society, which were introduced in 1994 and 1995; the training of selected graduate students and postdoctoral fellows; and a regular public seminar to stimulate awareness and discussion of special issues in SEPP within the greater Caltech community. The SEPP Program was initiated in 1987 by science historian and current faculty chair Daniel J. Kevles, the J. O. and Juliette Koepfli Professor of the Humanities, who continues to direct it.

"We believe it's valuable to expose Caltech students to discussions of policy and ethical problems," Kevles said. "They will have to grapple with these issues in one form or another throughout their careers, for they arise in many areas, including weapons research and arms control, the environment, and biotechnology." During the winter quarter this year SEPP is offering a course on the history of genetics, molecular biology, and biotechnology and how these fields affect society, jointly taught by Kevles and visiting professor of history Evelyn Fox Keller, who is on leave from MIT.

Preliminary Election Results

FRESHMAN DIRECTOR AT LARGE
Kara Swedlow

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ASCIT SECRETARY
Grace Yang

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IHC CHAIR
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UPPERCLASS-DIRECTOR AT LARGE
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THE TECH EDITORS
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Success Seminar Unsuccessful

by Samson Timoner

Last Thursday, 25 people had the disappointing experience of listening to Eden Zigman talk about "How Successful People Succeed". Dr. Zigman is a clinical psychologist associated with Santa Monica Hospital. What made Dr. Zigman an expert on the subject of successful people was unclear; certainly she gave no indication of significant knowledge on the subject in her one hour talk.

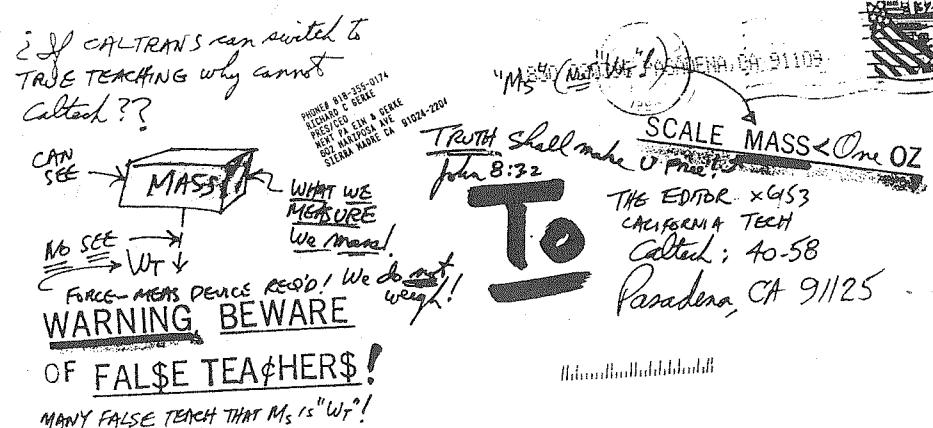
Dr. Zigman pointed out 10 attributes that she said she had noticed in successful people. Her listed attributes included: desire, integrity, faith or belief, fear, self-reliance, interdependence, drive and determination, organized planning, persistence and consistency. Her presentation consisted of little more than two overheads with the 10 attributes and a brief explanation of each. While many of her points agreed with my own opinions, she delivered those themes with little enthusiasm and very little confidence. Dr. Zigman talked about the qualities rather than what the audience could do to become successful. She gave no indication of how she came to learn the attributes, giving only one

specific example: the achievement of her Ph.D.

Dr. Zigman was unable to respond to question from the audience. She waffled on important questions such as "What is success?" If I may answer that: success is being able to wake up in the morning and believe that nothing is missing in your life. Overall, Dr. Zigman was not persuasive. It is my guess that she put the material together last minute in order to give the presentation.

I suggest that if you would like to learn about how successful people succeeded, listen to those people telling their own stories. A good place to find incredibly successful people is at Entrepreneur Club events where successful business people talk about how they became that way. On February 15 at 5 p.m., Michael Ross will talk about how he founded Arris Pharmaceuticals and made it into a major success (location TBA).

This seminar by Dr. Zigman was sponsored by the Staff & Faculty Consultation Center Lunch time Learning Series. The next one will also be February 15: "How to Meet New People and Keep the Conversation going." It could be interesting, you never know...

Letter To the Editor

Dear Editor:

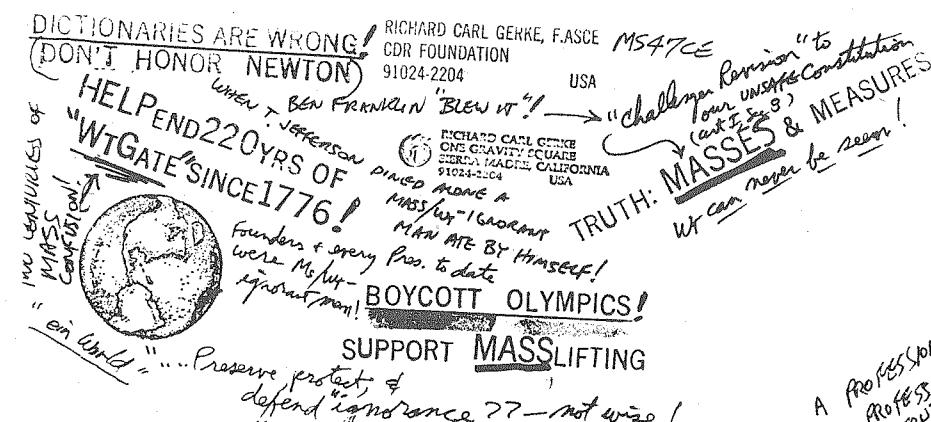
My education was severely injured by chemistry. They taught that we were "weighing" to learn "weight." NOT TRUE. The Truth (which will make us FREE!) (John 8:32) is we are MASSING to learn MASS. I suggest that students set a good example for faculty by avoiding

the unsafe W-WORDS ("Wt" and "TO WEIGH") and JUST SAY "MASS (Ms)" instead!

The ein (E) (kg/9.806650)(3.60 ounce)(102 grams) honors Caltech's own Albert Einstein. A counter mass can be seen, but the weight of a paper mass can

never be seen.
Faithfully,

Richard Carl Gerke,
MS '47, CE



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We Won!! We Won!!! We Won!!!
"No Way!, I can't believe it!!!"

What is the airspeed velocity of an unladen swallow?

Does anyone ever read this? If you do, let us know. E-mail editors@tech. send us your name, and give the message "The dog barks at midnight, but only if it is sunny." We MIGHT give you a reward (maybe...try us....)

The California Tech is distributed free. Issues will be mailed off-campus upon receipt of \$11 per year to cover third-class postage and preparation costs. Printed by News-Type Service, Glendale.

CALTECH public events

EXPECT THE UNEXPECTED

DOC WATSON

FRI., FEB. 9, 1996 / 8 PM
Beckman Auditorium
Regular Prices:
\$25.00 - 22.00 - 19.00

BLACK UMFOLOSI

Zimbabwe's answer to Ladysmith Black Mambazo

FRI., FEB. 16, 1996 / 8 PM
Beckman Auditorium
Regular Prices:
\$25.00 - 22.00 - 19.00

Coleman Chamber Music Concerts

VERDEHR TRIO*

SUNDAY, FEBRUARY 18, 1996 / 3:30 PM
Beckman Auditorium
Regular Prices: \$22.50 - 19.00 - 15.50 - 12.00

Works ranging from Frescobaldi to Thea Musgrave's "Pierrot"

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NEWS

I.H.C.
Minutes

Minutes of the IHC meeting, Thursday, 2/1/96

Present: Tom (Chair), Nestor, Bill Penn (Bl), Chris Walker (Da), Chris Carey, (Fl), Steve Bennett (Ll), Mike (Pa), Lon (Ru), and Josh Moats
Cameo appearances by Bill Castillo and Adil Karim

Washed up vets Bill and Adil arrive to drop off their replacements. This sucker is

back to take minutes. It's a transition period, you know.

There has been a rash of thefts on campus since the start of second term. In Page, two wallets and one purse are still unaccounted for. Some bike tires were slashed there by "the most interesting person" Mike has ever met while at Tech. Five purses and wallets have been stolen from Ruddock.

Lots of CD's disappeared from Dabney and Ricketts. Security was busy catching a suspect right as we were talking about this one.

Mike is happy and talkative today. It's his last meeting. He would like to see IHC delegate more athletic decisions to the Ath managers. He says rules changes and protests are best handled by people who know the rules the best. Tom says it would be difficult to convene a meeting of more than four Ath managers for protests. Two solutions are suggested. Let the Ath Committee deal with rules changes and the IHC deal with protests; convene a meeting once a term

with the Ath men and the IHC chair to discuss rules changes. Apathy wins this one (it's a transition period, you know). Consensus is to let the next whole IHC decide.

Chris Walker takes a straw poll on bringing back Interhouse. Last IHC supported removing limitations on the number of parties in a night. However, there was not much momentum to bring IHC back. Many parties on one night translates into some sparsely attended parties. Controlling an off-campus and high school crowd is also a concern. Further discussions are punted.

Chris wants to know how

people feel about changing Interhouse football to flag football. Tell your President how you feel about this one. A decision will come in the next few weeks.

Steve asks if anyone else is interested in a water purification system for their house kitchen(s). Chris says yes.

We try to schedule a more convenient meeting time and fail miserably. Yet another punt to next week. We adjourn, no apathy went along with this decision.

Respectfully Submitted,
Nestor Ocampo

Washed up ex-Prez and Secretary for a day.

The Outside World

by Myfanwy Callahan

BEIJING, CHINA—China has concluded an agreement with Russia to buy 72 SU-27 fighter planes. Taiwan in its turn will begin taking 150 American F-16 fighters and 60 French Mirage 2000 fighter bombers. Tension in the Taiwan Strait grows.

BONN, GERMANY — German officials admit that their plan for an economic union of Europe in 1998 may be too ambitious. Economic growth has slowed and some countries such as Italy and Greece still cannot meet the economic criteria for joining a currency union.

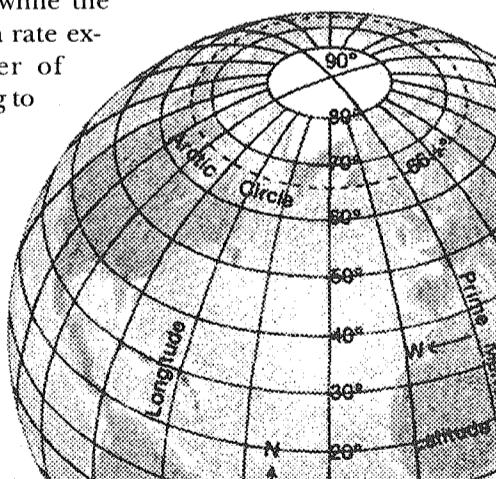
GOMA, ZAIRE — Hutu Rwandans who fled their country a year and a half ago are refusing to return. Many tell stories of harassment by the Tutsi government once they arrive. Meanwhile the refugee camp birth rate exceeds the number of Rwandans returning to their country.

PALE, BOSNIA AND HERZEGOVINA — The arrest of two of their top commanders has prompted Bosnian Serbs to break off contact with the Bosnian

government, threatening to retaliate unless the men are released. This is the most serious dispute between them since the peace agreement of December.

LOS ANGELES — The South Coast Air Quality Management District has proposed a new seasonal plan because of strong resistance to pollution control from the business community. Industrial emissions may be allowed to increase in winter months when smog is less severe.

WASHINGTON, D.C. — The new Tele-Communications Act approved by Congress last week includes the option of using a V-chip for your television. A V-chip would block transmission of programs with violence or sexually explicit content.

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—Playboy

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Winner: Best Foreign Film
—National Board of Review

**Shanghai
Triad**

Daily 4:30, 7:00, 9:30 p.m.
Sat-Sun Bargain Matinee 1:45 p.m.

GET THE MOST OUT OF CAREER DAY!

The Student/Faculty/Alumni Relations Committee of the Caltech Alumni Association is sponsoring the first in a series of career panel discussions on Tuesday, February 13 beginning at 7:30 p.m. in Winnett Lounge. Panelists will discuss a variety of topics including: what you need to know about your future employer; what your future employer needs to know about you; and how to effectively utilize informal, short-term interactions, i.e. Career Day.

Panel members include: Blair A. Folsom '68, Energy and Environmental Research Corporation; Warren G. Goda '86, Technical Manager, Northrop Grumman; Gavien N. Miyata '69, Systems Engineering Manager, Inmarsat-P Program, Hughes Space and Communications; and William M. Whitney '51, Technologist, Observational Systems Division, Jet Propulsion Laboratory. Franklin D. Dryden '54, President of Dryden and Associates, will moderate.

The SFAR Committee would like to know of other topics that might be of interest to students for future career panels. If you have any thoughts on what you would like to hear, contact Kerry below.

All students are welcome. If you would like to attend, please RSVP by February 12 to Kerry at x6852 or email kerry_etheridge@starbase1.caltech.edu. Light refreshments will be served.

**Visa Lottery
Begins Next Week**

The instructions for the 1997 U.S. State Department Diversity Visa Lottery were announced this week. The dates for this year's lottery will be February 12 to March 12, 1996. Nationals of the People's Republic of China, Taiwan, India, Philippines, South Korea, Vietnam, Great Britain (except Northern Ireland), Colombia, Dominican Republic, El Salvador, Jamaica, Mexico and Canada are not eligible for the program.

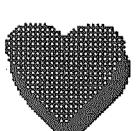
To pick up a copy of the procedures of how to apply for this Lottery, please stop by the Office of International Programs (Lloyd House, Olive Walk) if you are an international student, or the Faculty and Postdoctoral Scholars Office (Parsons-Gates, 010) if you are an international postdoc, professor, researcher or staff member.



**Sweets with the MOSH
at
Steele House**

355 S. Holliston

**Wednesday, February 14, 1996
9 - 11pm**



Come Early

The Facts About Depression

by the Counseling Center Staff

Earlier this term, the Caltech Student Counseling Center sponsored "The Facts About Depression: An Information and Screening Program" for undergraduate and graduate students as part of Wellness Week at Caltech. The event provided students with basic information about depression, as well as an opportunity to be screened for depression. Since we have had many inquiries from students who were unable to attend the program, we hope that this article will educate students who want more information.

It is a long-standing myth that if you are strong-minded you will not become depressed, but depression is a true psychological and medical disorder. The distinction between depression as a clinical syndrome that requires treatment and depression that is a more transient mood state such as feeling sad or unhappy, can be confusing. Sadness and unhappiness are normal and universal phenomena. These feelings usually pass quickly and do not impair a person's functioning or prevent the individual from enjoying aspects of his or her life. Depression as a clinical syndrome is something quite different.

According to the National Institute of Mental Health, clinically

depression affects over 15 million Americans each year. The lifetime expectancy for developing depression is 20 percent in women and 10 percent in men. Less than half of the people suffering from depression seek treatment for it, mainly because it is difficult to distinguish depression from the normal feelings of unhappiness, and because of the perception that strong willed or intelligent people should be immune from depression or should be able to handle it themselves. Whatever the reasons, those who do not seek treatment suffer unnecessarily and increase their likelihood of experiencing other episodes of depression in the future. In addition, 10 to 15 percent of people who suffer from depression commit suicide. These facts are all the more tragic because clinical depression is a treatable disorder with 80 - 90 percent of people experiencing improvement with treatment.

Depression can be caused by many factors. Research suggests that external factors (e.g. stress, loss), biological variables (e.g. family history of depression, neurotransmitter imbalances), and personality factors, can all contribute to the kind of depression an individual may experience, as well as the severity and the course of the symptoms.

Treatment for depression typically involves psychotherapy (talk therapy). Antidepressant medication is also sometimes used, depending on the nature of the symptoms, the severity, and the individual's personal preference and history. While medication for depression can help provide symptom relief, drugs alone are usually not enough. Therapy is needed to help people understand the reasons for their depression, as well as to address the thoughts, feelings, and situations that maintain or precipitate the symptoms, so that depressions do not recur. Early treatment increases the likelihood of positive results and most (over 80%) of people who seek treatment at all report feeling significantly better within 12 months. There are many different treatment approaches that have been tried in terms of both psychotherapy and drug therapy. Therapists at the Counseling Center can help in identifying whether you have depression and, if so, what approach is best in your case.

If you are interested in learning more about your own level of depression, or want to find out more because of concern about a friend or family member, please call the Counseling Center, x8331. We also invite you to make use of our library and other written resources on this topic.



The Signs of Depression

Knowing the signs of depression and getting help are two key factors in overcoming depression. Listed below are the most common symptoms of depression:

- Feeling sad or empty most of the day; occurring nearly every day.
- Inability to enjoy activities; persistent apathy or lack of motivation.
- Sleep disturbances, either too much or too little.
- Significant changes in appetite or weight, an increase or decrease.
- Fatigue or loss of energy.
- Feelings of worthlessness, inadequacy, or inappropriate guilt.
- Trouble concentrating; problems with making decisions.
- Recurrent thoughts of death or suicide.
- Irritable moods.
- Poor school performance.

Y.E.S.S '96

Positions for the Young Engineering and Science Scholars Program (Y.E.S.S.) are available for Summer '96 in the following areas:

- Instructor for Biology, Mathematics
- Teaching Assistantships in Biology and Earth and Planetary Science
- Head Counselor
- Program Counselor

Y.E.S.S is a five-week residential program that exposes 40 high school students to the joys of intensive scientific investigation. The program runs from July 8th to August 9th.

Applications are available in the Caltech Y and are due on Friday, February 23rd.

Contact Athena at x3180 or email at castroa@starbase1 for more information.

Y NEWS

by Donna Ebenstein

Broomball sign-ups will start on Wednesday, February 14 at 10 a.m. at the Y Lounge. The Broomball tournament is scheduled for February 25 (Murf Day weekend). Get a team together and come have fun on the ice!

Today at 3 p.m. in the Y Lounge we will be having the weekly **Friday Afternoon Y Movie**. This week's movie is **Clueless**.

In addition, we would like to remind everyone that the Y Lounge is here for your use, too. If you want to use the TV and VCR or just want a comfortable meeting room, stop by the Y to sign up on the calendar and pick up a key.

Wondering what to get your valentine? You can buy **Valentine's Day Balloon Bouquets** at the Caltech Y. Stop by or call x6163 for more information. Have a Happy Valentine's Day.

Honor Society Tau Beta Pi Welcomes Caltech's Best

by Michael Ru

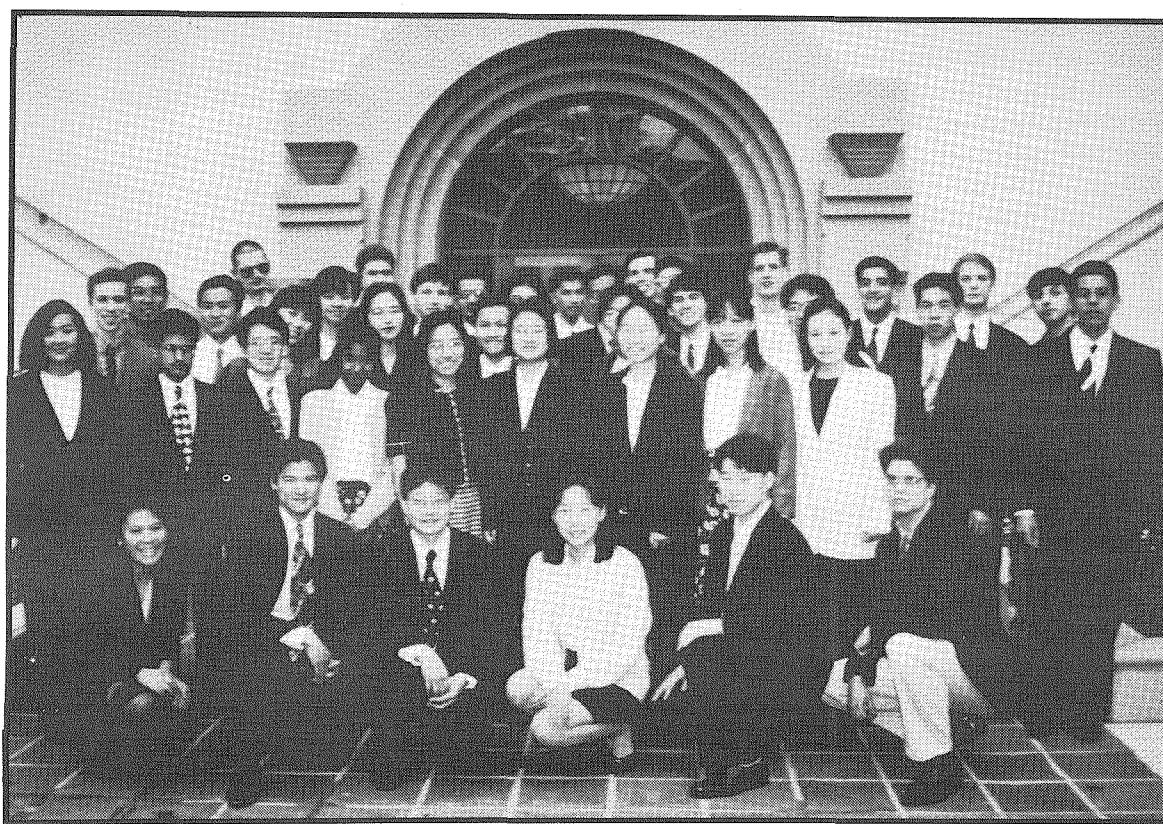
On January 26th, 32 of Caltech's best students were inducted into Tau Beta Pi, the National Engineering Honor Society. Caltech's chapter, designated California Beta, is the second oldest chapter in California and belongs to District 15 (Nevada and California), the largest district in the nation. Current membership in Caltech's chapter numbers 55.

Since its inception 75 years ago, California Beta has inducted over 2,100 members, including the famous Dr. Linus Pauling. Other notable Tau Beta Pi members include such achievers as physicist James Van Allen, astronauts Buzz Aldrin and Fred Haise, Nobel laureates William Shockley and John Bardeen, business executives Lee Iacocca and David Packard, and movie director Frank Capra.

Second only to Phi Beta Kappa, Tau Beta Pi now boasts 222 collegiate chapters and has initiated nearly 400,000 members since it was formed in 1885. Selection into the society is an honor bestowed only to those who meet the selection criteria of distinguished scholarship and exemplary character.

Scholastic merit is based on students' class ranking: juniors must be in the top eighth of their class while seniors in the top fifth. In addition, judge of character is based on their contributions to the chapter and to the community.

Association chapters have undertaken such projects such as



Left to right: District Director Deanna Chin, Vice President Kevin Du, Cataloger David Wang, Corresponding Secretary Jian Zhang, President Michael Ru

Not pictured: Recording Secretary Thanh Nga Tran, Treasurer Cecilia Park

designing and constructing a reading aid for the visually handicapped and volunteer service to the local community.

The Induction Ceremony took place in the newly built Moore Laboratory of Engineering. It was witnessed by Tau Beta Pi Chapter advisors Professor Sunney Chan of Chemistry and

Professor Frances H. Arnold of Chemical Engineering, as well as one of the three District 15 directors Deanna Chin. The Induction Ceremony was followed by a formal Banquet held at 888 Seafood Restaurant in the city of Rosemead.

Tau Beta Pi has been a dynamic and integral part of the

engineering profession for more than a century.

It takes pride in its commitment to the development of engineers of exemplary character so that they will be leaders on their campuses today and in the rapidly changing world of technology for the betterment of society tomorrow.

Advisors:
Professor Frances Arnold (Chemical Engineering)
Professor Sunney Chan (Chemistry)
Professor Melany Hunt (Mechanical Engineering)

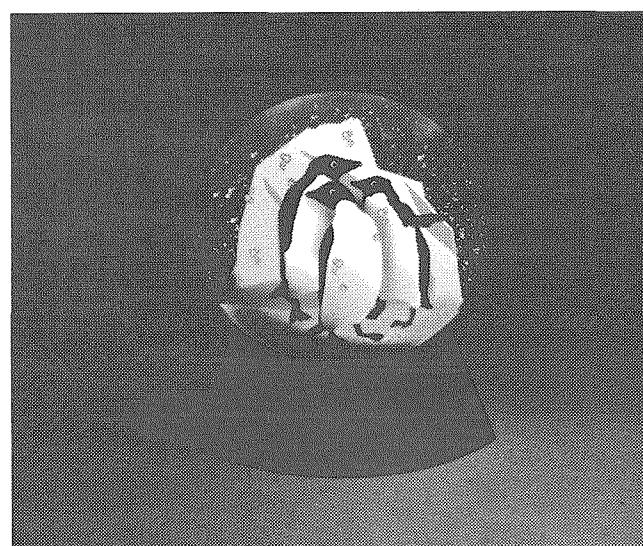
Executive Committee:
President: Michael Ru (ChE)
Vice-President: Kevin Du (Bi)
Corresponding Secretary: Jian Zhang (Bi)
Recording Secretary: Thanh Nga Tran (ChE)
Treasurer: Cecilia Park (Ch)
Cataloguer: David Wang (Bi)

Members: (Initiated 1995)
Donna Akutagawa (Bi)
Soon-Ghee Chua (EE)
Donna Ebenstein (ME/Bi)
Jason Hsu (AMA)
Clifton Kayano (EE)
Brian Kim (Bi)
Arvindh Krishnaswamy (Ph)
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Nathan Scandella (AE)
Alexander Simon (Bi)
Jon Wesslmann (APh)
Nam Yu (Bi)
Inn Yuk (Ch)
Daniel Zimmerman (CS)

Members: (Initiated 1996)
Amir Alagheband (ME/Ph)
Aristotlis Asimakopoulos (APh)
Sooketoo Bhuta (AE)
Brian Bircumshaw (ME)
Walter Briskin (Ph)
Amalavoyal Chari (Ma)
Jenny Chu (Bi)
Chinh Doan (EE)
Marcel Gavrilu (Ma)
José Hurtado (Ge)
Xinh Huynh (Ph)
Lin Jia (Bi)
Kelvin Kwan (Bi)
Jack Langsdorf (EE)
Eileen Lau (EE)
James Lin (CS)
Rahul Malhotra (Ph)
Aaron Matz (EE)
Ellis Meng (EE)
Pauline Ng (Bi)
Paul Penzes (CS)
Laila Pereira (EE)
Alexei Polichtchouk (Ph)
Igor Polishchuk (Ph)
Jeff Qin (EE)
Matthew Richardson (CS)
Mark Sorensen (ME/CS)
Vivek Sujan (ME)
Samson Timoner (APh)
Gloria Xu (E&AS)
Ning Zhang (APh)
Xinlan Zhou (Ph)

Steven Lieske — Replacing Recording Secretary

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BETHE: Nobel Laureate Gives Lecture at Caltech

CONTINUED FROM PAGE 1

sustain hydrogen fusion in hotter stars.

When America entered World War II, he worked on radar at Cornell and Cambridge until he was invited to join the Manhattan Project at Los Alamos, New Mexico as a division head in 1943 by J. Robert Oppenheimer, whom he had met during a series of conferences at Berkeley in the summer of 1942. In New Mexico, a newly-minted Ph.D. from Columbia with the name of Richard Feynman occasionally pulled him into heated discussions about how to approach particular problems; they were known as "The Battleship" and "The Mosquito Boat", respectively, for their different styles in approaching problems. Bethe left Los Alamos in January 1946; during the late 40's, he worked with other scientists such as Albert Einstein and Leo Szilard in attempts to limit the production of atomic weapons and prevent the development of the "Super", as the proposed hydrogen bomb was then known. He also supported Oppenheimer during investigations of his alleged disloyalty during the McCarthy years and served as a presidential advisor during negotiations with the Soviet Union over the Limited Test Ban Treaty. Afterwards, his sphere of work spread out to

include topics in applied physics such as civilian nuclear power plants and the development of the ablative heat shielding used by manned space capsules. He officially retired from Cornell in 1975, but, obviously, he still does a great deal of work there.

Bethe's talk concerned his research into the conditions in the core of a star immediately following a Type II supernova. This type, the most common, occurs when a massive (greater than 10 times that of the sun) star runs out of hydrogen in its core. At this point, the core partially collapses because nothing supports it against its own gravity; this results in increased temperatures and density that support the fusion of helium into carbon and oxygen. This supports the core, but in turn it increases the luminosity of the star and forces the outer layers outward, creating a red giant. When the helium is used up, the core proceeds up the nucleosynthetic ladder to neon, oxygen and silicon (at increasing rates) all the way to iron, which cannot undergo fusion even at the multi-billion degree temperatures now preva-

lent in the core. The iron core then photodisintegrates into alpha particles and neutrons; the protons in those alpha particles are then forced by the heat to combine with free electrons into neutrons (with a resulting shower of neutrinos). The result is a core of almost pure neutrons (or sometimes a black hole), but there is no further energy production to support the rest of the

neutron star proper, an electron star proper, an "atmosphere" where entropy decreases rapidly with increasing distance from the star and prevents any material from coming in, a convection zone of turbulent "outer shell" material that originates from the dying "prompt shock" and smoothly infalling material outside the shock layer. Normally, the neutrinos from the final conversion

of the core into neutrons are extremely ephemeral particles that interact with nucleonic matter (everyday protons, neutrons and electrons) very rarely; a case in point of this comes from the grand total of 20 neutrinos out of billions detected by scientists from the 1987A supernova by their

interaction with 2,140 tons of a chlorine-water solution. However, in the final core reactions of the dying star the neutrino luminosity surpasses 10³² ergs/second; this flux is dense enough to interact with the nearest infalling material and heat it. The material then rebounds off the atmosphere of the neutron star and sends a shockwave propagating outward against the

rest of the smoothly infalling layers. This all takes place in less than a second, but the shockwave takes up to three days to travel to the surface of the star and result in the visible supernova. Bethe admitted that the question remained as to how the shock breaks away from the neutron star and whether an energy deficit remains between the falling-in rate of the matter and the amount of energy deposited by the neutrinos.

The speech was fairly technical, but understandable for those of us with Ay 1 and Ay 20 under our belts. The greatest thrill was seeing one of the living legends of science (not that there are a dirth of those at Caltech) appear in front of my eyes. Of course, there were a fair number of people I ran into before the talk who obviously didn't know Hans Bethe from Hans Brinker and the Silver Skates, which seemed a little disappointing to me. Also, it seems to me that when a particular division has a famous speaker coming (such as Harrison Schmitt, the first Darb on the moon, or Alex Wolszczan, co-discoverer of the first pulsar planets), it should try to promote the event a little more and not be too afraid of having a packed house; but then again, the house was pretty close to neutron-star density with the mostly-physics crowd alone.

Bethe worked with scientists such as Albert Einstein and Leo Szilard in attempts to limit the production of atomic weapons and prevent the development of the "Super," as the proposed hydrogen bomb was then known.

supergiant. The layers of hydrogen nearest to the core crashing down against the neutron star, but they rebound off and rip away all of the star's outer surface in a devastating blast; this is the supernova explosion.

Bethe's talk focused on the details of the core rebound. He figures that the interior of the star immediately after collapse consists of four zones; the neu-

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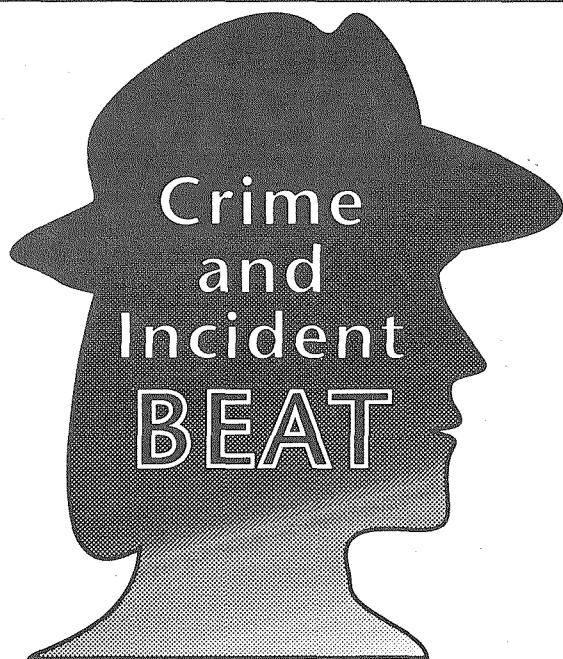
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Crime and Incidence Beat

January 23, 1996

Theft

Astro leaf blower, valued at \$500, was taken from the driveway of the Alumni House at 345 S. Hill. Victim last saw leaf blower on the ground next to the garage in the driveway. Victim discovered leaf blower was missing approximately 3:30 p.m.

Suspicious Person

Male, white, 21 years old, 5'8", 135 lbs, with brown hair and brown eyes. At the time of the incident, suspect was wearing blue jeans, denim shirt and a blue jacket wrapped around his waist. Suspect attempted to gain entrance into the north entrance of Church. Suspect

was not Caltech affiliated. Security escorted him off property.

January 25, 1996

Theft

Victim was visiting a friend in Page house at approximately 11:30 p.m., her and the friend went to the gym. Victim left her back pack and purse in the friends room. Upon returning to the room at approximately 2:25, discovered her back pack and purse missing.

January 26, 1996

Theft

Macintosh C.P.U. valued at \$1000, was taken from the Synchrotron building. Victim last saw the C.P.U. on January 23, at approx. 10:00 a.m. The C.P.U. was discovered missing

on January 24, at 3:00 p.m.

January 27, 1996

Grand Theft Auto

Blue Volkswagen Beetle valued at \$1500 was taken from California Blvd. near the Synchrotron lot. Victim last saw the vehicle on January 26 at 11:15 p.m. Victim discovered the vehicle missing on January 27 at 12:30 a.m. Glass from the passenger window was discovered on the ground in the area where the vehicle was parked. Pasadena Police Department notified.

January 28, 1996

Fire

Between 4:42 am and 4:58 am, security responded to the activation of the emergency phone located in the Tournament park lot and the emergency phone located near Wilson and San Pasqual. Both activation's were caused by an unknown person setting paper placed in the phone booth on fire. Suspect then called security at 5:25 admitting to setting the fires. If you have any information concerning this incident, please contact security at x4701.

January 29, 1996

Incident

Security responded to a call concerning a person at Page House smashing bicycles. Upon the arrival of security suspect was sighted. The damage bicycles

were located inside the west door of Page House. Pasadena Police Department responded. Pasadena Police arrived and spoke to the owners of the bicycles and the suspect. Victims declined to press charges and suspect was escorted off campus.

January 30, 1996

Burglary

Makita Power Saw, Makita 3/4 inch drill, Makita power screwdriver, and Hilti power screwdriver, total value \$610 were taken from 504 S. Catalina. Victim last saw the tools on January 29, at 6:00 p.m. Upon returning to the location on January 30, at 7:00 a.m. discovered tools missing.

January 31, 1996

Theft

Purple Mountain bike valued at \$300. was taken from Ricketts House. Victim stated that he put his bike in the hallway of Ricketts House at approx. 12:00 noon on January 30, the bike was not secured. Victim noticed that the bike was missing on January 31, at approx. 12:00 midnight.

Theft

50 CD's, portable phone, backpack, purse and contents, total value, \$1000. was taken from Ricketts House room 36. Victim left her property at approx. 11:30 p.m., the door to the room was not secured. Upon re-

turning at 12:00 midnight, discovered the items missing.

January 31, 1996

Accident

On January 30, 1996 at approx. 5:20 p.m. victim was walking on the sidewalk near the Children's Center when she was hit by a person riding a bicycle on the sidewalk. Victim bruised her knee and left side of her face. Victim was a student at the Children's Center.

Theft

Portable Sony C.D. player valued at \$200, was taken from the Blacker House room #12. Victim left C.D. player in an unsecured room at 2:00 p.m. Upon returning to the room at 4:30 p.m., discover the C.D. player missing.

February 1, 1996

Suspicious Person

While making a routine patrol of the West Wilson lot security observed an individual fitting the description of a suspect in 2 thefts and 1 damage of personal property incidents which occurred on campus. Suspect was identified, and detained for the Pasadena Police Department. Suspect was arrested for Burglary. The suspect is the same person involved in the damage to the bicycles on January 29 and theft at Ricketts House on January 31.

Foxtrot
by Bill Amend



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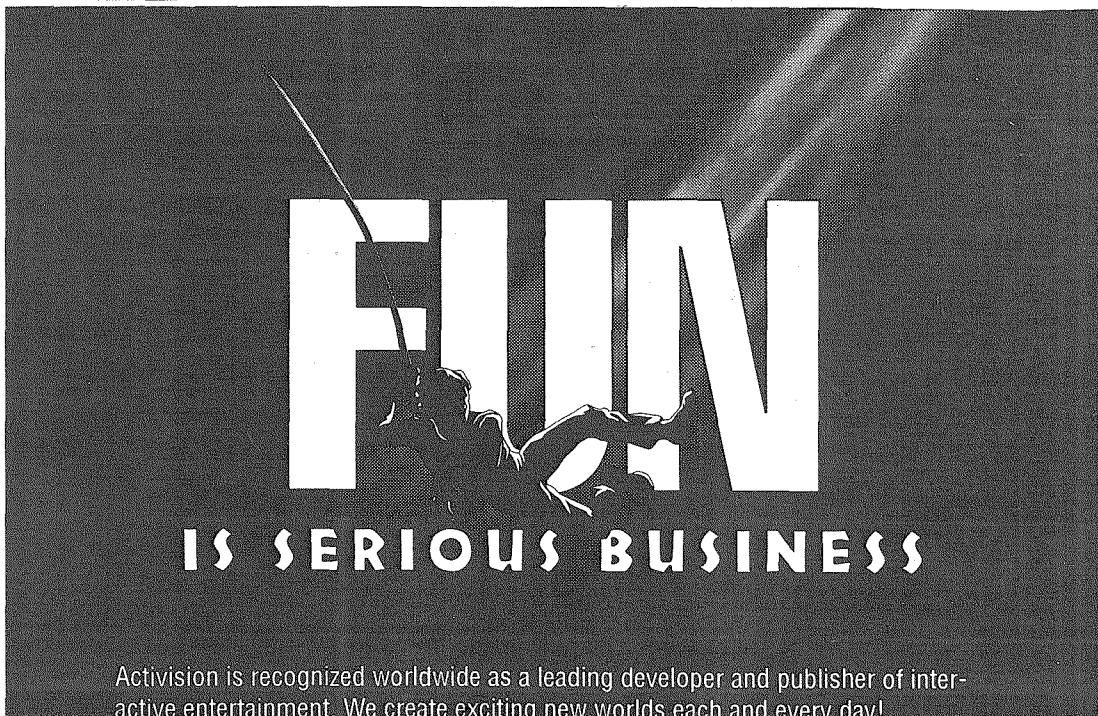
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ELECTIONS

ASCIT Bylaw Changes Up for Vote Again

Hi everyone. Due to a protest of the bylaw changes found valid by the ASCIT Excomm, all of the bylaws changes voted upon in the ASCIT President/BOC Chairman election (those that did and didn't pass) must be re-voted upon. The bylaw changes are listed below in the format that appeared at the time of election. Editorials about the changes can be sent to the Tech and will be run next Friday (the 16th). The election will be held the following Monday (the 19th). Thanks. Dave Relyea

Change #1

Changes marked as follows:

Cut text is crossed out: ~~This is crossed out.~~

Added text in italics: *This text is being added.*

All changed text is **bold**.

Separation of the offices of ASCIT Vice-President and BOC Chairman

ARTICLE IV - Officers.

Change:

SECTION 1. The general officers of the Corporation shall be the President, Vice President, Secretary, Treasurer, Interhouse Committee Chairman, Director for Academic Affairs, Director for Social Activities, two Directors at Large, and Athletic Manager. These offices, and those of Board of Control Secretary and Editor of the California Tech, are elected offices.

To:

SECTION 1. The general officers of the Corporation shall be the President, Vice President, Secretary, Treasurer, Interhouse Committee Chairman, Director for Academic Affairs, Director for Social Activities, two Directors at Large, and Athletic Manager. These offices, and those of

BOARD OF CONTROL CHAIRMAN, Board of Control Secretary and Editor of the California Tech, are elected offices.

Change:

SECTION 3. Office of the President: The President shall be the official representative of the Corporation, and he shall preside at its meetings. He shall be chairman, without vote unless a tie occurs, of the Board of Directors and a member of the Executive Committee. He shall have ultimate responsibility for proper observance of all responsibilities delegated to members of the Board of Directors. He must be either a junior or a senior in the fall term immediately following his election.

To:

SECTION 3. Office of the President: The President shall be the official representative of the Corporation, and he shall preside at its meetings. He shall be chairman, without vote unless a tie occurs, of the Board of Directors and a member of the Executive Committee. **He, along with the Vice-President,** shall have ultimate responsibility for proper observance of all responsibilities delegated to members of the Board of Directors. He must be either a junior or a senior in the fall term immediately following his election.

Change:

SECTION 4. Office of the Vice President: The Vice President shall, during absences of the President, assume the duties of that office. He shall act as chairman of the Board of Control. He shall assist the President in coordinating the policies and activities of the Associated Students. His primary responsibility shall be to insure the continuance of the Honor System among the students. He must be either a junior or a senior in the fall term immediately following his election.

To:

SECTION 4. Office of the Vice President: The Vice President shall, during absences of the President, assume the duties of that office. **He shall act as chairman of the Board of Control. He shall assist the President in**

coordinating the policies and activities of the Associated Students. His primary responsibility shall be to insure the continuance of the Honor System among the students. His primary responsibilities shall be to assist the President and to ensure the success of the day-to-day operations of the Board of Directors through interaction with internal ASCIT services including but not limited to publications and movies. He must be either a junior or a senior in the fall term immediately following his election.

Add:

Section 10. The specific duties of the Chairman of the Board of Control shall be determined by the Board of Control.

Section 11, The specific duties of the Secretary of the Board of Control shall be determined by the Board of Control.

and renumber all successive officer descriptions.

Article VII - The Board of Control, Section 2.

Change:

SECTION 2—MEMBERSHIP. The Board of Control shall consist of the Vice President of the Corporation, who shall act as chairman, and the following members: the Secretary of the Board of Control, two members appointed by the Board of Control, and seven members, one elected in each of the seven undergraduate student Houses...

To:

SECTION 2—MEMBERSHIP. The Board of Control shall consist of the **Vice President of the corporation, who shall act as Chairman, and the following members: the Chairman of the Board of Control,** the Secretary of the Board of Control, two members appointed by the Board of Control, and seven members, one elected in each of the seven undergraduate student Houses...

Article VIII - Elections and Procedures, Section 1.

Change:

SECTION 1. Nominations for the offices of President and Vice President shall open at 8 A.M. the second Wednesday of second term and shall close at 5 P.M. the following Tuesday.... To:

SECTION 1. Nominations for the offices of President and **Vice President** **Board of Control Chairman** shall open at 8 A.M. the second Wednesday of second term and shall close at 5 P.M. the following Tuesday...

Article XIV - Publications.

Change:

SECTION 3.

The Editor and Business Manager (if any) of each publication are solely responsible to the Board of Directors for that publication's success...

To:

SECTION 3. **The Vice President of the Corporation**, the Editor and Business Manager (if any) of each publication are solely responsible to the Board of Directors for that publication's success...

Change:

SECTION 5. The Business Manager of each publication is responsible for all funds belonging to that publication. He may open accounts only with financial institutions previously approved by the Board of Directors. He will account for all receipts and expenditures in a manner recommended by the Treasurer. He will submit written reports on the financial condition of the publication to the Board of Directors through the Treasurer at the beginning of each term and at the end of the academic year. The Business Manager is the only one empowered to transact business in the name of a publication. His responsibilities terminate after distribution of the publication, invoicing of all advertising and receivables, payment of outstanding bills, preparation of adequate financial records, and, in the case of the Big T and the little t, the collection of revenues from advertising and other sources. If no Business Manager is appointed for the publication, these responsibilities are also those of the Editor.

To:

SECTION 5. **The Vice President of the Corporation and** the Business Manager of each publication **is are** responsible for all funds belonging to that publication. **He** **The Business Manager** may open accounts only with financial institutions previously approved by the Board of Directors. He will account for all receipts and expenditures in a manner recommended by the Treasurer. He will submit written reports on the financial condition of the publication to the Board of Directors through the Treasurer at the beginning of each term and at the end of the academic year. The Business Manager is the only one empowered to transact business in the name of a publication. His responsibilities terminate after distribution of the publication, invoicing of all advertising and receivables, payment of outstanding bills, preparation of adequate financial records, and, in the case of the Big T and the little t, the collection of revenues from advertising and other sources. If no Business Manager is appointed for the publication, these responsibilities are also those of the Editor.

To:

In order to win the election, a candidate must receive an absolute majority of votes. Absolute majority shall be defined as more than the error plus half the number of correctly-cast non-abstaining votes. The Count Process shall be conducted by the Election Committee as follows: (a) For each office, all correctly-cast ballots shall be organized and counted according to first Rank votes. If no candidate receives more than the number of "NO" votes, then there shall be a vacancy in that office. If not, the "NO" votes shall be distributed among the candidates according to Second Rank. (b) If no candidate has an absolute majority of votes, the candidate with the least number of votes shall be eliminated, and each of that candidate's ballots shall be redistributed among the remaining candidates by next available choice ranked. If all remaining candidates on a ballot have been eliminated, then that ballot shall be considered an abstention. (c) If a candidate now has an absolute majority of votes, that candidate wins. If not, steps (b) and (c) shall be repeated until a winner has been determined.

To:

In order to win the election, a candidate must receive an absolute majority of votes. Absolute majority shall be defined as more than **half** the error plus half the number of correctly-cast non-abstaining votes. The Count Process shall be conducted by the Election Committee as follows: (a) For each office, all correctly-cast ballots shall be organized and counted according to first Rank votes. If no candidate receives more than the number of "NO" votes, then there shall be a vacancy in that office. If not, the "NO" votes shall be distributed among the candidates according to Second Rank. (b) If no candidate has an absolute majority of votes, the candidate with the least number of votes shall be eliminated, and each of that candidate's ballots shall be redistributed among the remaining candidates by next available choice ranked. If all remaining candidates on a ballot have been eliminated, then that ballot shall be considered an abstention. (c) If a candidate now has an absolute majority of votes, that candidate wins. If not, steps (b) and (c) shall be repeated until a winner has been determined.

Change #2

ARTICLE XIII - General Fiscal, Section 1.

REPLACE ALL OCCURRENCES OF \$20 WITH \$25 AND \$60 WITH \$75

Change:

SECTION 1—DUES. The Corporation dues shall be payable on registration day of each term at the rate given in the schedule below:

Fall Winter Spring Total

\$20.00 \$20.00 \$20.00 \$60.00

Dues for each term shall be non-refundable after add day of said term. The Board of Directors shall revise the dues annually to allow for inflationary increases in costs. The recommended revisions for the following year shall be voted on during third term by the Student Body, requiring at least a two-thirds (2/3) majority vote for passage. Of the dues, 10% each term shall be for a subscription to *The California Tech*.

To:

SECTION 1—DUES. The Corporation dues shall be payable on registration day of each term at the rate given in the schedule below:

Fall Winter Spring Total

\$20.00 \$20.00 \$20.00 \$60.00

\$25.00 \$25.00 \$25.00 \$75.00

Dues for each term shall be non-refundable after add day of said term. The Board of Directors shall revise the dues annually to allow for inflationary increases in costs. The recommended revisions for the following year shall be voted on during third term by the Student Body, requiring at least a two-thirds (2/3) majority vote for passage. Of the dues, 10% each term shall be for a subscription to *The California Tech*.

Change #3

ARTICLE VIII - Elections and Procedures, Section 6.

Insertion of the word "Half"

Change:

In order to win the election, a candidate must receive an absolute majority of votes. Absolute majority shall be defined as more than the error plus half the number of correctly-cast non-abstaining votes. The Count Process shall be conducted by the Election Committee as follows: (a) For each office, all correctly-cast ballots shall be organized and counted according to first Rank votes. If no candidate receives more than the number of "NO" votes, then there shall be a vacancy in that office. If not, the "NO" votes shall be distributed among the candidates according to Second Rank. (b) If no candidate has an absolute majority of votes, the candidate with the least number of votes shall be eliminated, and each of that candidate's ballots shall be redistributed among the remaining candidates by next available choice ranked. If all remaining candidates on a ballot have been eliminated, then that ballot shall be considered an abstention. (c) If a candidate now has an absolute majority of votes, that candidate wins. If not, steps (b) and (c) shall be repeated until a winner has been determined.

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Preparing for Career Day

by Samson Timoner

Career Day is a tremendous opportunity for all students: graduate and undergraduate. For undergraduates struggling to choose your future, this is your opportunity to learn about specific careers in companies. For undergraduates who have already chosen a career, this is your chance to speak to people in industry without fears of making a bad impression. For you undergraduates wondering what you can do after graduation, this is your chance to find out.

Career Day is NOT a job fair. At a job fair, companies look for individuals to fill specific positions. At Career Day, most companies come to make their presence known on campus. They want name recognition among students and they want to inform the Caltech community about what they do. The hope for recruiters is to influence students before they look for jobs so that when the time to search for employment comes, a student will consider a specific company.

There are three different types of students who come to Career Day: those starting to think about which career they want to approach, those who are about to start a job search, and those who have already started. All three types should use one basic idea in their approach: Career Day is an informal opportunity to talk to recruiters.

There are three times you can talk to a company at Caltech: at an information session, at an interview and at Career Day. During an interview or information session, recruiters are specifically trying to form an impression of you. At Career Day, companies are mostly interested in sending out information about themselves to the community.

This is your opportunity to ask any question you want with little risk of making a bad impression. Also, there will be hundreds of people visiting each company so a recruiter is not likely to remember you even if you do make some sort of blunder. When you go to Career Day, relax! Don't worry about making a good impression. Instead, browse over each booth to learn more about companies and individual careers.

For those students, such as freshmen, who are just starting to think about their future, Career Day is a great opportunity to learn about specific careers. Many companies send employees who aren't recruiting specialists. This is your opportunity to ask people in industry what they do, what they like about it and what they don't like. Find out what it is like to work in a specific company. Find out what skills you would need to approach a particular career. Go to Career Day with the attitude that this is your chance to learn about possible careers —

because it is!

Career Day is the ideal place for students such as myself who are just starting to search for a job. I suggest you come to the fair with a list of your interests and skills. Your job is to find a match between a company and your interests. Many people will simply look through the list of companies and only visit those that hire in their field. However, I suggest you visit as many booths as you can at the fair. Remember, companies do hire other majors than the ones they advertise. For example, Schlumberger is a huge oil company that specifically searches for geologists and chemists. However, I know an electrical engineer who interviewed with Schlumberger and ended up working there. Don't be afraid to talk to recruiters about the skills you have and how you might fit into their company. Don't be afraid to ask about summer positions. You could talk yourself into a job.

Career Day is not the ideal place for those students who have been intensely searching for long-term positions after graduation. However, Career Day can still be useful. If you fit in this category, you should take Career Day a bit more formally. Instead of looking at Career Day as an informal way to meet recruiters, think about it as an extra chance to talk to a company. Come informed about each company just like you would for a job interview. You should take advantage of the advertising in the Tech today to learn about the companies that interest you. At Career Day, many companies will plan interviews on the spot — don't be afraid to ask them about it. Only by taking the initiative can you expect results.

Final Details: Dress casually. Remember, you should relax at the fair. I recommend wearing something a little nicer than jeans and a T-shirt; however, unless you are looking for a job in the near future, there is no reason to dress formally.

Bring at least 10 or 20 copies of your resume. A number of recruiters will ask for them so they can quickly get an idea of who you are. This year, 43 out of 55 companies are specifically looking to fill summer positions. Also, a number of companies will be making arrangements for interviews at Career Day. If a company is interested in you, they will want your resume. Just in case you want another reason to bring your resume, the CDC (Career Development Center) will be giving out door prizes for resumes.

Fifty five companies will attend Career Day which will take place in Dabney Gardens from 11 a.m. to 3 p.m. on Thursday, February 15.

Special thanks to Amy Malak in the CDC for her input to this article.

Techno Geeks

Beavis and Butthead "Virtual Stupidity"

"Virtual Stupidity", a new cd-rom release from Viacom New Media, is a hilarious and enjoyable adventure in the style of games like "Day of the Tentacle" and "Legend of Kyrandia." When you begin, Beavis and Butthead are stuck in school and want to escape in hopes of joining Todd's gang. The game involves navigating the two throughout their town and includes many opportunities to break things, make rude comments, and generally harass everyone you come in contact with. There are various puzzles to figure out (like making sure McVicker doesn't catch B&B escaping from school or eluding prison guards to escape from jail). The graphics and dialogue were done by the original creators of the cartoon series and holds true to the true moronic nature of the two. It includes a lot of new material and hilarious comments as well as three full motion, full audio music videos B&B comment on. If you enjoy the cartoon and find bathroom humor and stupid antics funny, you will definitely enjoy this game.

7 bits out of 8.

MTV Unplugged

This second release from Viacom New Media is another multimedia cd-rom using an MTV program as its basis. It includes a lot of information on the popular unplugged se-

ries including descriptions, audio, and video clips from every performance to date. It also contains three full motion, full screen videos of unreleased performances from 10,000 Maniacs, Paul McCartney, and Lenny Kravitz. These videos are of high quality and play at 15 fps, full screen, on the system we tested it on. The layout of the program is done well and provides a wealth of information if you are interested in MTV Unplugged.

6 bits out of 8.

Psycho Pinball

This brings together nearly everything that one would want about a pinball game. There is but the act of feeding quarters into a machine missing. Three types of standard playing fields exist: a wild west theme, an ocean theme and a haunted house theme. These boards can be played separately or together through a meta "funhouse" board from which you can get to any of the others. A fun game, it includes that ability to tip the ball, but watch out for the tilt sensor.

7 bits out of 8.

Warcraft 2

Warcraft 2 is a very fun game. It is the follow-up release to the very successful "Warcraft: Orcs and Humans" and includes many new features that make the game extremely fun. Most important is the multi-player feature which allows up to 8 players to battle it out on pre-made or custom made maps. It supports network games and is compatible with kali for

internet-wide game play. It also includes a map editor for Windows 95 for creating personal games used in multiplayer mode. Many new features were added to game play including new modes of fighting (aerial attacks with dragons or griffons, sea battle with submarines, destroyers, or battleships, and new magic users such as death knights and paladins). These new fighting creatures make game play very involved and different every time. There are still only two races you can play with (orcs and humans) but the depth of play makes up for this. The graphics and sound are of very high quality. Warcraft 2 is a DOS cd-rom game and multiplayer mode can be run with only one cd. A full byte.

Descent 2 Demo

Another follow up release that promises to be a great flick is the sequel to Descent. So far, only the demo has been released and can be obtained from Interplay's ftp site. Information is available on the Web at www.interplay.com. The demo contains three full levels and shows off the new features of the game. This includes a suite of new enemies as well as the guidebot and thiefbot. The guidebot seeks out keys, weapons, doors, and just about anything that can help you out. Thiefbots are very annoying: if they touch your ship, they steal a random item and are very difficult to destroy. This much anticipated release should be available in March.

Career Day Door Prizes Include:

- Computer Games
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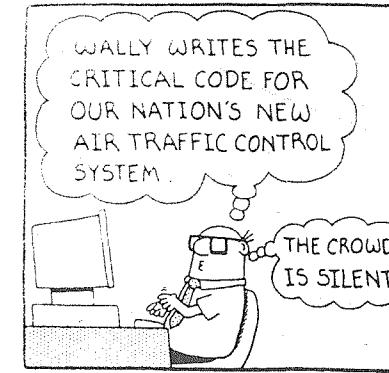
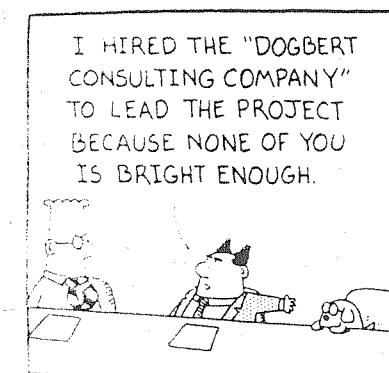
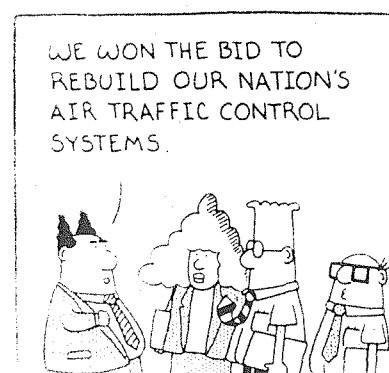
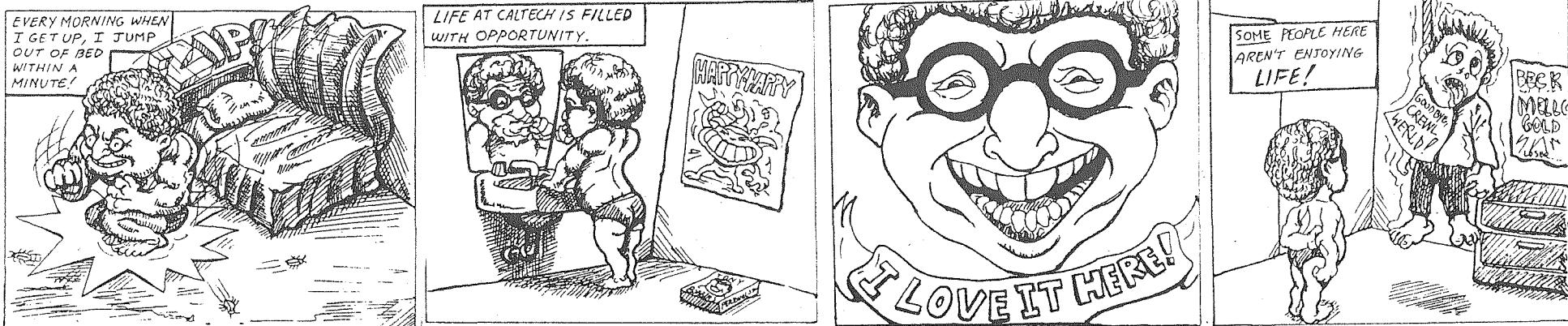
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Remember to bring a copy of your resume to enter the Door Prize Drawing!!!!

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by CHUCKLES



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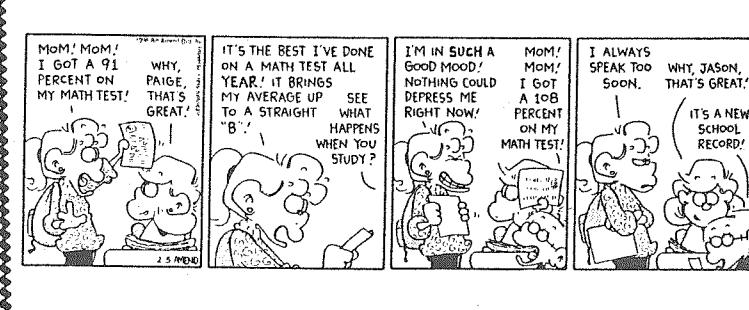
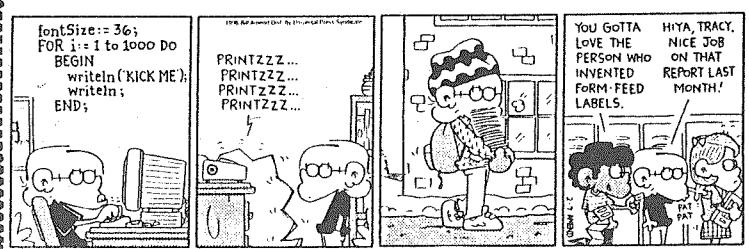
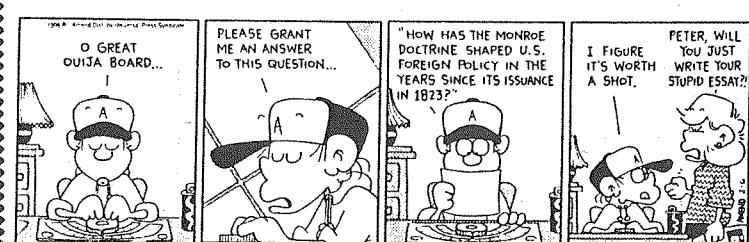
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FoxTrot

by Bill Amend



Summary of Core Curriculum Changes: The Committee Report

Core curriculum reform at Caltech recognizes the strength and value of the existing core yet seeks to incorporate some aspects of science that are currently missing but so important in the modern scientific world and society. The reform allows us the opportunity to modify existing core curricula and also incorporates a new way of doing business: The core courses will be under the control of the Core Curriculum Council and its Steering Committee rather than the individual options. The benefits of this new approach include the opportunity to encourage and maintain coherence and quality control among the core courses, the active role of an institute-wide group in the selection of instructors and the opportunity to consider and implement new ways of instruction.

Major core curriculum reform will begin with the next incoming freshman class, but the new structure of a Core Curriculum Council and its Steering Committee will ensure that it is an evolutionary process in which further changes and monitoring can take place. In general, the new core will not demand more of the students (in total units) nor will it change the load distribution unduly. We urge that students take core courses at the appropriate times (i.e. complete the core in two years). In the future, as in the past, an effort will be made to recognize the diversity of student capabilities and interests, even while embracing the importance of a common set of courses. Contraction of the existing core will be from 54 to 45 units each in Math and Physics and from 18 units to 15 units in Chem 1. The 21 units thus released will be devoted to a new required course in Biology (9 units, 3rd term freshman year), a 9 unit menu course in some other area of science (3rd term freshman or sophomore year) and a 3 unit written Science Communication requirement. The new biology and menu courses are primarily intended to expose students to important aspects of science that are currently not part of the core. They can be secondarily helpful for some students to decide on their major. We recommend delay in the choice of major (to midway third term, freshman year) in order that students take greatest advantage of these new courses.

Some major changes in the math core are recommended as follows: Ma1a will devote only half of the term to Calculus and the other half to probability. Beginning with Ma1b, and continuing through to Ma2b, there will be two parallel tracks, one of which is for the more mathematically inclined (somewhat more abstract), the other more concrete with many examples. Two tracks afford students some choice and parallelism affords them flexibility in switching tracks. Multivariable calculus (div, grad, curl up to and including Stokes and Gauss theorems) will be covered in the first year (Ma 1c). Statistics and some lin-

ear algebra will be covered in Ma2a and ordinary differential equations in Ma2b. There will be no Ma2c.

The physics core will be largely unchanged in the first year. In the second year, parts of the current Ph2a (waves) and 2c (statistical mechanics and thermodynamics) will be merged into the new Ph2a. Quantum mechanics (Ph2b) will remain essentially intact. There will be no Ph2c.

The chemistry core will contract from three quarters of 6 units each to two quarters of six and nine units respectively. The contraction is accomplished primarily through the removal of biochemistry. Some of this material will, however, reemerge in the new biology course.

The new required biology course will be topical, but designed to introduce students to a variety of tools and concepts of modern biology. We see biology

as an indispensable part of the education of scientists and engineers for the 21st century and place high emphasis on the choice of instructors, approach and content that will be attractive to students. The proposed

In general, the new core will not demand more of the students (in total units) nor will it change the load distribution unduly.

topic for the first offering of Bi 1 is AIDS and the course will be organized by Scott Fraser and Jean-Paul Revel.

The new menu courses will initially be two in number, with all students being required to take one. The initial offerings in Astronomy and in Earth and Environment will introduce students to the tools and ideas of

these areas of science, and will make use of the material presented in the core courses of the first two quarters, freshman year, as well as emphasizing the different methodological challenges these areas provide. The astronomy course is being organized by Roger Blandford; the earth sciences course is being organized by Dave Stevenson. In later years, there may be more than two menu courses.

Science communication should be an essential part of Caltech education. We propose that all options require a 3 unit course (or part of a course) that introduces students to the skills of technical seminar presentations. Many options already have this in place. For those that do not, our proposal is equivalent to a 3 unit increased requirement that is to be absorbed as part of existing option requirements. We further propose the introduction of a

written Science Communication requirement (3 units). Introduction at the sophomore level is proposed (so it will first be offered in 1997-98); this allows us to put this requirement in place even though the details of implementation are incomplete.

As a consequence of our proposal, there is a net increase in 3 units in each of the winter and spring terms of the freshman year. In the winter term this is due to Chem1b being 9 instead of 6 units. In the spring term, the increase comes from Bi1 being 9 units, whereas the deleted Chem1c is 6 units. Those choosing the Menu (9 units) instead of a six unit elective get a heavier dose of science than is typical.

Most students currently take 45 units or more in each quarter of their freshman year, so the proposal is consistent with the actual practices of students. However, we do not yet know the consequences of the recent change to letter grades for third term freshman year.

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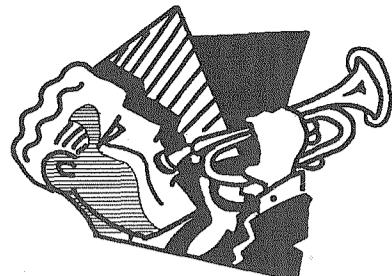
Look for us on campus

Information Session: Monday, Feb. 19
4-6:00pm, Booth Hall, Room 201

Interviews: Tuesday, Feb. 20
9am-4:30pm

Career Development Center

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Jim's CD Reviews

The CD's reviewed are all ones that I liked enough to buy, and as a result, the starring scheme is a little weird. It works like this:

0 - a gift, saved only to be a ride chaser 1 - it's okay, so I keep it around for those occasional urges 2 - it's pretty good, but either not great or not my usual genera 3 - it's good, gets listened to regularly, and I plug it to friends 4 - it's really good and spends more than its share of time in the player. 5 - it's absolutely awesome and I can't live without it. (Note that there are not very many CDs that make it this high.)

mean=3, std dev=1

The halves are because I can never make up my mind. If you want any more info on any cd, or think I should hear one of yours, just drop on by my room (dabney 11) or email me (jpierce@ugcs).

Big Hard Disk volume 2

This cd has its own flavor. While not industrial or hard techno, it's certainly not gentle. It is a compilation by someone associated with Sheep on Drugs (not

the inside world) so Sheep have 2 songs (including the master mix of motorbike, worth one point in Kontrol Faktory Bingo) and find their way into mixing 3 more. There is an orb song, one from latour, and two from yello. I especially liked E (not the drug, but the saranji sunset mix) it felt good (E, if you can explain it, you aren't experiencing it).

3 stars.

Bjork Post

I love the song "it's oh so quiet." It's super cool, and bjork is, too. Her songs all use her voice like it was a mystical different instrument. Behind her vocal escapades are beats, sometimes heavy, sometimes light, and her perfectly controlled voice beautifully floats gently above them. A few of the songs sound like some form of techno where bjork is the lead synthesizer. "It's oh so quiet" has a big band backing that's way cool. Bjork has a weird style, so before you get any of her stuff, give it a listen. She is very good, in my opinion, so if you're cool, you'll like it. If you don't...

3 Stars

Black Sheep *A wolf in sheep's clothing*

The black sheep of the native tongue family are The Black Sheep. When De La Soul and

Tribe called Qwest started making records for Tommy Boy, they brought with them a bunch of friends and with the help of Prince Paul, the dude responsible for many rap groups including the whole native tongue, got record deals for De La, Qwest, Queen Latifah (who doesn't hang with them anymore because she's to good...), The Violators, Jungle brothers, and Black Sheep. This album is hilariously gross, with 9.5 inch penis humor, and the word ho used more often than "the." Cameos of Q-tip, Fife and the Violators make it entertainingly connected. If you liked the older rap with the native tongues (none of the new crap from the guys) This is one CD you'll like.

2.5 stars

Blind Mellon - *blind melon*

"And I speak my point of view but it's not sane." I heard "no rain" on the radio and thought it was a woman singer, i.e. cranberries on krak. Since I liked the song, I bought the album. It turned out to be pretty good. It's unfortunate that "no rain" was much more successful than the album, since it's not even the best track on the album. It's all good, but unlike Green Day, each song is a different set of ideas, so despite the wonderful continuity and great guitar, each

song is a definitive entity. Pretty cool.

2.5 stars

Blur - *parklife*

Blur are hard to explain. I first heard them on volume, and then their new album came out, and I heard that, and this is their next-to-new album. I haven't really heard any of their older stuff, and the stuff I have varies a lot. As for *parklife*, it's pretty cool, and it makes me think european, kind like the farm if they made rock, not electro-pop. Girls and boys almost has a disco sound to it. To get an idea of what Blur sounds like, ask the "The The" mailing list: infected@cs.uchicago.edu or borrow someone's. I like it.

2.5 stars

Boo-Yah Tribe *New Funky Nation*

Seriously funky rap from six bad brotas is what this album does to you in your earhole. It's good old school, with smooth bass samples over hard beats, and since it's from the last year of real rap, they're all dressed weird, especially the honkey, who looks like a german. They pledge allegiance to a new funky nation and rap about how fast they can change their clips and smoke their dope. I give them props for the funniest anti drug message "sell it, don't do it." Right.

1.5 stars

Brand Nubian *One for all*

This is the first album of the rap group which has the most creative samples and intellectual lyrics. Sadat X is well versed in history and makes many subtle references to all different events in US history as he conveys his ideas about modern problems

and events. Grand Puba, who has since released his own album, is a very belligerent anti-many-things guy who vents about such things as whores and goldiggers, whites, and how he is really just being positive about blacks. He's certainly very articulate. This album has my favorite rap song, concierto in x minor, sadat X at his best.

3.5 stars

The Boredoms - *Chocolate Synthesizer*

This is the stangest album I own. It is by a japanese band, so I am unable to understand the few lyrics that are on this album, but that's okay. I bought it for sheer noise value. It is nothing but noise. Clanky, beepy, grindy, guitars noise. I really like action synthesizer hero and the disco sounding synth on acid police.

2 stars

c-ya next time...

until later - JP

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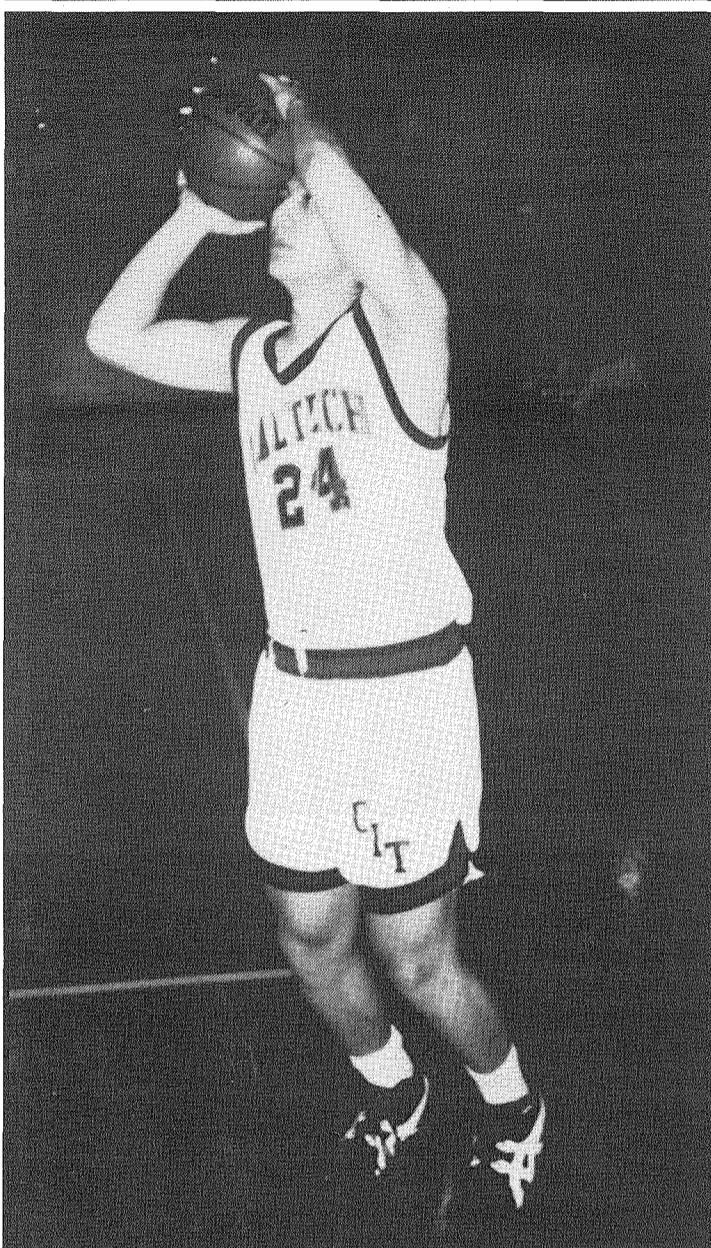
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ATHLETIC ACCOLADES

BY ANGIE BEALKO



Senior Steve Tsai

Photo by Angie Bealko

SPORTS

Nothin' But Net

Senior Steve Tsai may be mild mannered off the basketball court, but as soon as he steps onto the floor an amazing transformation occurs. He becomes an animal. Between the inspiration he feels that God gives him each day and his devoted parents cheering him on at every game, it doesn't seem like Steve can lose. As a matter of fact, he's won almost everything. As a freshman he took home the "Freshman of the Year" award after starting all year at forward for the Beavers. His sophomore year Mr. Tsai won both the "Highest Free

Throw Percentage" award and the coveted Vesper (MVP) trophy. Last year as a junior Steve earned was honored as the Best Defensive Player on the team. For four years Steve has been a starter on the men's hoop squad, and this year is the team captain.

In addition to his athletic prowess, Steve is also an outstanding student at Caltech. He is a biology major with plans to attend medical school. This year Steve was nominated for an NCAA Scholar Athlete Award (winners will be announced in the Spring), placing him amongst some of the nation's most accomplished student athletes. "Steve has made a great commitment to the team. He

has made every practice this year except for one to attend an interview. I admire him and his teammates for coming out every day and working hard just because they love the sport, not because they're trying to win a championship. Steve gives over a hundred percent every day and has a fantastic attitude" adds Men's Basketball Coach Gene Victor.

This year Steve leads the team in field goal percentage, and tallied 19 points on two separate occasions. Forget about the work you have to do some Wednesday or Saturday night and come on down to Braun Gym to hear Steve yell "shot" in one of the deepest voices you have ever heard.

STATS ON STAFF

BY ANGIE BEALKO

Overhead Smash: Coach works hard for team improvement

Coach Karen Nelson isn't a great coach just because she's energetic, encouraging, and extremely knowledgeable. No, she's a great coach because she can take a die hard basketball player and turn her into a decent tennis player in a few weeks... take it from me. If you want to learn tennis from one of the best coaches and players around, take a class from coach Nelson or join the Women's Tennis team.

Coach Nelson has had an amazing amount of success in her own tennis career as a collegiate athlete. She was a four year player for Pomona-Pitzer where she earned All-American

honors three times (1987,88,89). She was named Pomona-Pitzer's Most Valuable Athlete from all of the intercollegiate teams during the 1988-89 school year. Her most impressive athletic accomplishment came in 1988 when she and her partner captured the NCAA Division III Doubles Championship. However the true testament to her character as a competitor came during the 1988-89 season when she was honored with the Arthur Ashe Head Sportsmanship Award for Division III. In 1990, Karen coached Pomona-Pitzer to a 3rd place finish in the NCAA Team Championships.

This season marks coach Nelson's sixth year of coaching at Caltech. Since she has been at Caltech, coach Nelson has made amazing strides with Caltech's Women's Tennis team, raising their level of competitiveness immensely. Last year the team tied for fifth in the conference championships. They have increased their winning percentage from 8% in the first three years to 49% in the last three. Coach Nelson not only makes her players stronger physically, she prepares them mentally as well. If you are looking for a patient coach to teach you how to play smart tennis, just go see coach Nelson.



UPCOMING EVENTS

Saturday 2/10

Baseball
Women's Tennis
Men's Tennis
Swimming
Fencing
Track
M. Basketball

HOME vs. Cal Maritime	11 a.m.
AWAY vs. Chapman	10 a.m.
HOME vs. LaVerne	1 p.m.
AWAY vs. Whittier	11 a.m.
HOME Invitational	11 a.m.
AWAY vs. CMS	noon
AWAY vs. Redlands	7:30 p.m.

Monday 2/12

Golf

AWAY vs. Redlands	1 p.m.
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Tuesday 2/13

Women's Tennis

HOME vs. Marymount	3 p.m.
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Wednesday 2/14

Men's Tennis
M. Basketball

HOME vs. Chapman	3 p.m.
AWAY vs. Cal Lutheran	7:30 p.m.

Friday 2/16

Baseball

HOME vs. Claremont Mudd	2:30 p.m.
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Gentlemen Beavers Run Into "Ratio Trouble"

by Angie Bealko

Last Saturday night the Occidental Tigers visited Caltech for the second men's basketball match-up between the two teams this season. Despite Caltech's strong showing in the first contest, the Tigers were too much for the mighty engineers to handle this time around. Caltech fell 68-44.

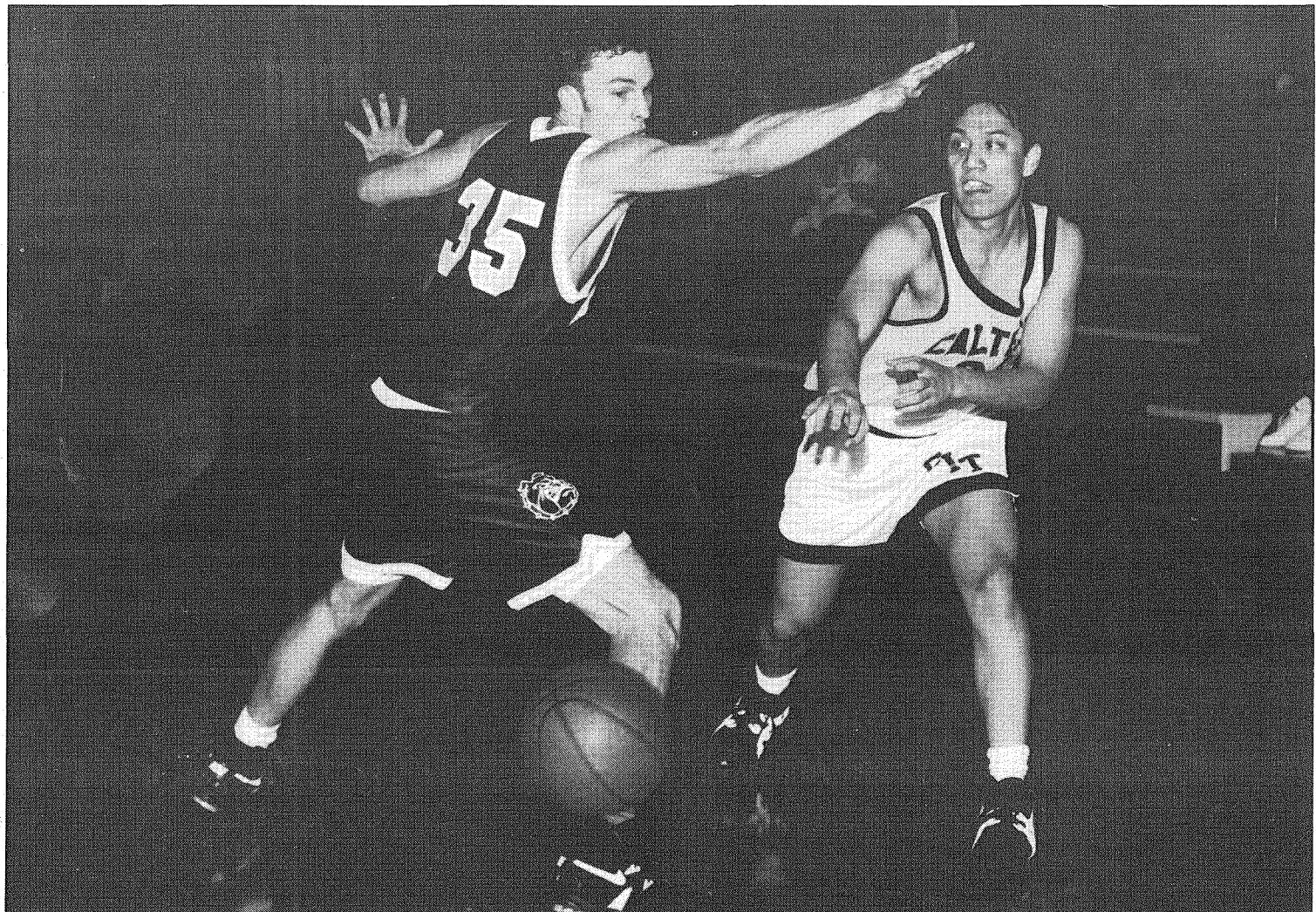
The opening tip went to Oxy, and they pushed the ball quickly down the floor forcing Senior Matt Goff to commit Tech's first foul with only 23 seconds off of the clock.

Occidental pressed Caltech from the onset, but the Beavers managed to handle the press with ease throughout the match-up, never losing the ball in the back court.

Junior Josh Moats put Caltech's first points up on the board with a three pointer about two minutes into the game. After that the Beavers scored two points off of Sophomore Ben Turk's free throws, but couldn't sink a field goal for nearly five minutes.

Turk broke the dry spell with a short two footer off of a nice pass from Moats. Sophomore Arun Durairaj helped out Tech sinking a three at the midway point of the first half. Sophomore Scott Lyons earned a steal soon afterwards to give the momentum to Tech.

Occidental managed to get a clean breakaway near the end of the half, giving them a dunk which was quite a crowd pleaser



Senior Steve Tsai deftly avoids a clothesline

for the Oxy fans. Senior Steve Tsai answered back with a three pointer twenty seconds later. Senior Matt Goff, Freshman Mike Grebeck, and Turk all sank a bucket before time expired for the half, leaving the score in favor of the Tigers at 31-19.

In the second half Turk sank four more free throws right

after the halftime intermission, pulling the Beavers slightly closer to their opponents. However, Occidental slowly started pulling away. Durairaj, Tsai and Moats each sank another three pointer for Tech, and Goff put in three more field goals.

Both Goff and Turk made outstanding blocks, with Turk's

earning the unanimous appraisal of both the Occidental and Caltech fans.

Freshmen Brett Tolman, Matt Hall, and Caleb La Vergne, and Juniors Bob Webbink and Gilbert Yoh all saw playing time in the last ten minutes of the second half. Webbink had a key defensive board which enabled the

Beavers to push the ball quickly down the court and set up Goff for two. The highlight of the game came when Hall sank a three pointer from the baseline with 26 seconds left in the game.

The next home game for the men is Saturday February 17th against Claremont Mudd.



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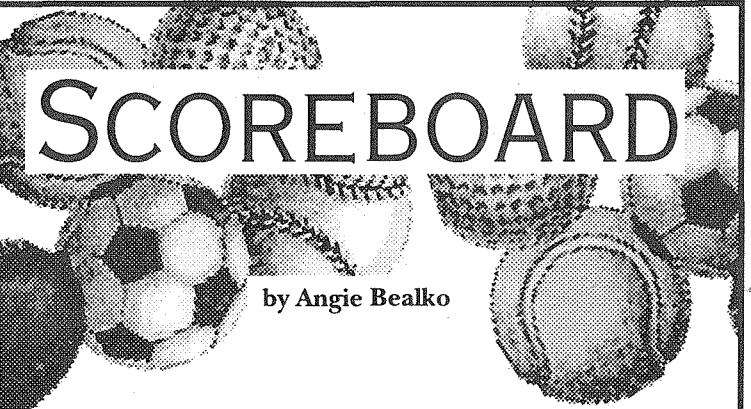
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Wednesday 1/31

•Men's Basketball vs. LaVerne LOST 59-55

Friday 2/2

•Women's Tennis vs. Biola WON 6-3

Saturday 2/3

•Swimming vs. Oxy LOST

•Men's Basketball vs. Oxy LOST 68-44

Monday 2/5

•Golf vs. Whittier WON 354-362

Tuesday 2/6

•Baseball vs. Pomona LOST JV 17-2

Caltech Beats USC in Men's Volleyball Season Opener

by Rich Chin

On Tuesday, January 30, the Caltech Men's Volleyball Club team traveled to USC to play the opening match of the 1995-1996 intercollegiate season. Having scrimmaged the USC club team earlier in the winter, the Caltech squad knew it was in for a tough match. The team came out in force, bringing 16 of its 18 players to USC.

Caltech started well in the first game, jumping to a 4-1 lead. USC was able to rally to even the score though, and the game became a furious contest of sideouts. Consistent passing by swing hitters Andreas Masuhr and Steve Sears coupled with the soft hands of setter Chad Edwards helped keep the team's offensive options open, and kills were evenly distributed among all the players. Good blocking by middles Gary Leskowitz and Mike Machczynski as well as opposite hitter Jack Prater gave a hint of what was to come in later games. Unfortunately, opening game jitters were evidenced by inconsistent service and defense, which USC was able to capitalize on to take the game, 15-12.

In the second game, Caltech came back with a vengeance. Most of the mistakes of the first were erased. Masuhr and Sears brought both raw power and guile in racking up their kills. Prater showed his uncanny ability to find holes in the USC defense and bury the ball. The Caltech blockers were able to shut down the USC offense. Setting masterfully as usual, Edwards led the team to a 15-7 victory.

USC was galvanized into action in the third game, and Caltech's squad lapsed somewhat in concentration. USC was able to jump to a 13-6 lead and seemed to have an unstoppable momentum. The squad was able to stage

a comeback and regain the momentum of the match, but was ultimately unable to overcome the USC lead and lost the set, 10-15.

The rejuvenated Caltech squad was fired up for the fourth game and jumped to another 4-1 lead. USC was again able to rally to tie the score. Then Edwards

came back into the match, refreshed, the Caltech block came alive and destroyed the USC offense, and the rest of the game was owned by 'Tech. USC was to score only two more points as Caltech steamrolled to a 15-6 win.

The fifth game was tense as always, as it is a rally-score, point-

per-play format. Caltech earned an early mini-break but it was soon recovered by USC. However, the Caltech team was not to be denied. Passing by Masuhr, Sears, and Kiely made the USC serves almost ineffectual, and vicious hitting picked apart the USC defense. Caltech won a mini-break

to change ends, then went on for a 3-point lead. Heads-up blocking and defense led Caltech to close the game and match, 15-11.

All in all, the match lasted a little over two hours. The squad showed its fierce determination to win in taking the 5-set victory, 12-15, 15-7, 10-15, 15-6, 15-11.

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Announcements

✓ The Bookstore is holding a Valentine's Day Raffle for a "beautiful, velvet, four pound box of chocolates. No purchase is necessary; the drawing will be held at high noon, February 14th.

✓ The next semester of the jazz improv class (non-credit) at Caltech will start on Saturday, February 17th, at 2pm in the afternoon in room 12 of the SAC. This is a great jazz improv class which covers all the basics, from intervals, scales, and chords, to reading and analyzing standard tunes, such as "Girl From Ipanema" and many versions of the blues. There will be two classes this semester, beginner/intermediate and advanced. The class, which is to meet once a week, is very reasonable, at \$100 for the semester, and is taught by Josh Levy, a graduate of USC in jazz. Please contact Josh Levy for further information at (213) 934-0373, or you can just show up at the first class on February 17th at 2pm.

Delta Airlines is offering special "extra credit" student fares as low as \$138 round-trip (and as high as \$318, depending upon locations of travel) for travel between the dates January 26th and March 31st. Tickets are nonrefundable and must be purchased at least seven days before departure, with certain blackout dates. To get these special rates, students are to call Delta at 1-800-9DELTA0.

Events

✓ The Zimbabwean group Black Umfolosi will be giving a performance of their traditional Zulu war dances and South African songs on Friday, February 16th at 8pm in the Beckman Auditorium. Tickets start at \$19, with \$8 rush tickets for students one half hour before show time, subject to availability.

✓ Theater Arts at the California Institute of Technology present K2, by Patrick Meyers in the Ramo Auditorium on February 16th, 17th, 23rd, and 24th at 8pm, and on February 18th and 25th at 2pm. Tickets are \$10 general admission, \$6 for students.

Legendary guitarist Doc Watson will be performing a program of folk and bluegrass music, accompanied by Jack Lawrence on Today, Friday, February 9th, at 8pm in the Beckman Auditorium. Admission starts at \$19, with \$8 student/senior rush tickets one-half hour before the performance starts.

As part of the Caltech-Huntington Interdisciplinary Seminar Series *The Long Nineteenth Century*, James Chandler from the Department of English of the University of Chicago will be giving a seminar entitled *Representative Romanticism and the Novelty of the Historical Situation* in the Trustees Room, Huntington Library, on Saturday, February 10th, at 2pm.

✓ The Entrepreneur Club is proud to welcome Michael J. Ross (Caltech PhD Ch., '77), Founder of Arris Pharmaceuticals, who will give a talk titled *Biotechnology, Chemistry, and the Entrepreneur... Oil, Water, and Detergent?* on Thursday, February 15th, at 5pm in 102 Steele. Refreshments will be served. Email jessica@cco.caltech.edu for more info.

✓ The Entrepreneur Club will be holding the workshop *Essential Management Skills for the Caltech Engi-*

Ωε γιοτ ρε-ελεχτεδ, σο ψου χαν αλλ φυστ συνυφφο-οφφ

After all, it's not like we need you anymore.

✓ denotes a new announcement.

✓ The 1996 Inter Valley MS Walk is seeking volunteers to help make this fund-raising 10K and 5K walk to be held on April 14th possible throughout the Valley. Volunteers are needed to help planning, assist on the day of the event at registration or at rest stops, and to promote the walk in the area. This walk is the largest single fund raising events the MS Society holds annually, with the funds raised going to research and to help provide services to the over 7,000 families affected by MS in the area.

Club Announcements

✓ The Caltech Ballroom Dance Club is back in business! The dance club now offers introductory West Coast Swing classes on Wednesday evenings from 7:00 to 8:30 p.m. in the Winnett Lounge. The classes are taught by professional instructor Richard Orozco from the studio Let's Dance L.A. No experience or partner is required. 4 classes are \$12 for Caltech students/staff or JPL employees (or for partners of Caltech or JPL employees), and \$20 for others.

✓ The Caltech Ballroom Dance Club has also organized an outing to a salsa club for Tonight, Friday, February 9th. The club is Sportsman's Lodge, which is located at 12833 Ventura Blvd., Studio City, (phone 755-5000). The entrance fee is roughly \$12, which includes a salsa class from 8:30 p.m., followed by dancing with a live band. Meet in front of Winnett at 7pm today to catch a carpool to the club.

✓ The Caltech Korean Students Association and Chinese Students Association invite you to *Lunarfest '96*, a formal dinner and dance celebrating the new Lunar New Year. Come celebrate in the scenic atmosphere of The Castaway, tucked away in the mountains of Burbank, overlooking the valley. Tickets are \$25 per person. *Lunarfest '96* will be held Friday, February 16th from 6:30pm to 1:00am. For more information, please contact Albert T. Lee (x1058 or ksa@cco.caltech.edu) or Alex Lin (795-7424 or csa@cco.caltech.edu).

✓ The Entrepreneur Club is proud to welcome Michael J. Ross (Caltech PhD Ch., '77), Founder of Arris Pharmaceuticals, who will give a talk titled *Biotechnology, Chemistry, and the Entrepreneur... Oil, Water, and Detergent?* on Thursday, February 15th, at 5pm in 102 Steele. Refreshments will be served. Email jessica@cco.caltech.edu for more info.

✓ The Entrepreneur Club will be holding the workshop *Essential Management Skills for the Caltech Engi-*

neer, taught by Paul Konkel, Founder and Managing Partner of Konkel & Associates, in Winnett Clubroom #1 at 2pm on Saturday, February 17th. Space is limited and refreshments will be served. Please RSVP by e-mail at jessica@cco.caltech.edu.

From the Counseling Center

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

Fellowships and Scholarships

Finding that Science and Math aren't your only interests? The J.P. Getty Museum understands. In fact, they have a program for people like you: The J.P. Getty Trust is now accepting applications for summer internships from culturally diverse undergraduate students interested in exploring careers in art museums and related areas of the visual arts and the humanities. Students of all academic disciplines are encouraged to apply. The internships can be held at a variety of J.P. Getty locals in the Southland, go from June 17th through August 23rd, and provide a \$3,000 stipend. The deadline for applications is **March 4th**.

From the Fellowships Advising and Resources Office, extension 2150, e-mail lauran_stolper@starbase1.caltech.edu

✓ Attention Graduating Seniors: Many private high schools and middle schools offer one year fellowship programs for graduating seniors who would like to teach for a year. Positions are usually paid. Some fellowships are in day schools and some in boarding schools. If you would like to have us send you a copy of a list of such programs plus a guide that tells you more about these fellowships please e-mail the Fellowships Advising Office. Give your name, specify teaching fellowships in the subject or body and give your box number.

✓ The Lindbergh Foundation Grants Awards support innovative ideas at their early stage of development. The grants are open to citizens of all countries and support research and educational projects that address in some way the balance between technology and the environment. Ten grants in amounts of up to \$10,580 are awarded each year. Applications are available through the Fellowships

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Advising Office.

Women who are U.S. citizens can apply for a travel grant to Sweden if they plan to study or research in Sweden. More information is available in the Fellowships Advising Office. Students can request an application from The American Women's Club in Sweden, Scholarships Foundation, P.O. Box 12054, S-102 22 Stockholm, Sweden. Be sure to include a self addressed envelope with your application request.

Work as a volunteer in one or more of 23 countries this summer. Volunteers receive room and board and can work from 2 to 4 weeks on a project. More than one project can be scheduled. Projects include tasks such as restoring a castle, organizing a festival, planting trees, building a playground or implementing a recreation program for children. This program is sponsored by the Council on International Exchange (CIEE). It is a very popular program, and it is highly advisable to apply early. No language skills are needed with the exception of Spanish for Spain and conversational French for North Africa. There is a placement cost of \$195 for one 2-4 week project. Information brochures are available in the Fellowships Office or we would be happy to send you one via campus mail: e-mail your name, the fact that you want an International Volunteer Projects 1996 brochure and your mailcode to lauran_stolper@starbase1.caltech.edu. A listing of last year's volunteer projects is available for review in the office. Note that special fellowships for minority students interested in this program are available through the CIEE.

From the Deans' Office, 102 Parsons-Gates:

The Deans' Office is accepting proposals for the Monticello Foundation and the Robert and Delpha Noland Summer Internships. Three to five Caltech undergraduate women (current freshmen, sophomores and juniors) will be given an opportunity to participate in research projects outside the Caltech/JPL community for ten weeks during the summer. Each student will receive a \$3,600 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 Monday, **March 4th, 1996**.

The Morris K. Udall Scholarship and Excellence in National Environmental Policy Foundation has created a scholarship program to attract students into careers in environmental public policy, health care, or tribal public policy. Scholarships are awarded on the basis of merit to students who are sophomores or juniors during the 1995-96 academic year and who have excellent academic records and demonstrated interest in and potential for careers in environmental public policy or are Native Americans or Alaska Natives who have excellent academic records and demonstrated interest in and potential for careers in health care or tribal public policy. The scholarship covers eligible expenses for tuition, fees, books, and room and board to a maximum of \$5,000 for one academic year.

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

The Association of State Dam Safety Officials, Inc. announces its 1996 Dam Safety Scholarship Program. The scholarships are for a maximum of \$5,000. Eligible applicants must be juniors or seniors in 1996-97, must be U.S. Citizens, and must have cumulative GPAs of 3.0 and be recommended by their academic advisors. Applicants must also be in civil engineering programs or related fields, and must demonstrate an interest in pursuing careers in hydraulics, hydrology, or geotechnical disciplines. Applications and all supporting documents are due **February 15th, 1996**.

The Marin Education Fund announces the opening of its 1996-97 undergraduate grant application process. To be eligible, applicants must be undergraduates, must be enrolled at least half-time, and must be residents of Marin County. Financial need will be considered, and copies of 1995 tax returns will be required. For applications or additional information, call the Marin Education Fund at (415) 459-4240. Applications are due **March 2nd, 1996**.

citizens or permanent residents of the United States. Applicants must also be majoring in chemistry, biochemistry, chemical engineering, or in a chemically-related science, and must be planning a career in a chemically-related field. Other qualifications include full-time attendance in 1996-97, demonstrated high achievement in chemistry or science, and evidence of financial need for scholarship aid according to FAFSA guidelines. Applications are due **February 15th, 1996**.

The Consulting Engineers and Land Surveyors of California (CELSOC) are offering scholarships of up to \$5,000 to undergraduates and graduates working towards degrees in engineering or land surveying. Undergraduates must be juniors or seniors in 1996-97. Both undergraduate and graduate applicants must be enrolled full-time, have a minimum cumulative GPA of 3.2, and be U.S. Citizens. Applicants must also be interested in pursuing a career in the consulting engineering or land surveying fields. Completed applications and all supporting documents are due **February 16th, 1996**.

The Thai Government is offering scholarships to Thai students studying in the U.S., who are also under 30 years of age, and who are majoring in computer science (2 scholarships), economics (1 scholarship), and business administration (1 scholarship). Students must have no commitments to other scholarship donors, as they will be required to work for the Thai Revenue Department, Ministry of Finance for a period of time following graduation. Both undergraduate and graduate students are eligible. Applications and supporting documents are due by **February 29th, 1996**.

In 1997, The Rotary Foundation will celebrate 50 years of awarding scholarships with the **1997-98 Rotary Foundation Ambassadorial Scholarships**.

These are scholarships for students who want to study abroad for 3 months to 2 or 3 years. The scholarships are for study in any field, or to do intensive language training and cultural immersion in certain countries. The maximum award of the Ambassadorial Scholarships is \$22,000 for a year. Interested students should apply to a local Rotary Club (not all Rotary Clubs will offer scholarships every year). Application deadlines are set by individual Rotary Clubs and may be as early as **March, 1996** or as late as **July, 1996**. For more information or for the terms of the scholarships, come to the Financial Aid Office.

The Society of Manufacturing Engineers announces five undergraduate scholarship programs and one graduate fellowship program. The scholarship programs will be awarding a total of 40 scholarships; awards range from \$500 to \$2,500 each. The graduate fellowship program will be awarding ten \$5,000 awards. The scholarship programs require full-time enrollment in a manufacturing engineering or manufacturing engineering technology program, and also require a minimum GPA of 3.5. The graduate fellowship program requires full-time graduate enrollment in a manufacturing engineering or industrial engineering technology program, and also requires a minimum GPA of 3.5. Applications and supporting documents are due **March 1st, 1996**.

The Zonta Club of the Santa Clarita Valley Area is offering two \$1,000 undergraduate scholarships to female residents of the Santa Clarita Valley. Applicants must be full-time during the 1996-97 academic year, and must have legal addresses within the Santa Clarita Valley. Applications are due **March 1st, 1996**.

The Marin Education Fund announces the opening of its 1996-97 undergraduate grant application process. To be eligible, applicants must be undergraduates, must be enrolled at least half-time, and must be residents of Marin County. Financial need will be considered, and copies of 1995 tax returns will be required. For applications or additional information, call the Marin Education Fund at (415) 459-4240. Applications are due **March 2nd, 1996**.

Concert/Lecture Series Schedule

Lagerstrom

Lee-Chin Siow will be performing works by Schnittke, Prokofieff, Debussy, and Ravel in a free concert on Sunday, February 25th at 3:30pm in the Dabney Lounge.

Science, Ethics, and Public Policy Seminar

Dr. Gerald L. Geison, Professor of History at Princeton University, will be giving a Science, Ethics, and Public Policy Seminar entitled *Did Pasteur Cheat? Does it Matter?* on Friday, February 16th at 3:30pm in the Judy Library.

Next in the Series: *Modern Themes in the Science and Politics of the French Revolution* on February 26th.

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