Bridges Named Braun Prof

Caltech News Bureau

Dr. William B. Bridges, an expert in microwave and quantum electronics and as pioneer in the development of lasers, has been named the Carl F. Braun Professor of Engineering at Caltech.

The endowed chair is made possible by grants from the Braun family, including Carl F Braun Trust Estate and C F Braun & Co. The chair's previous holder was earthquake engineer Dr. George Housner, who is now Carl F. Braun Professor of Engineering, Emeritus.

Dr. Bridges, 48, received his BSc, MS and PhD degrees in electrical engineering from The University of California at Berkeley. In 1961, he joined the technical staff of the Research Laboratories of the Hughes Aircraft Company, where he conducted basic and applied research on gas lasers.

In 1969, he discovered a new laser physics, he developed the argon-ion laser in 1964, a device which is now widely used in applications as laser surgery, holography, holographic storage, and laser animation displays in entertainment. His work at Hughes also included the development of laser systems for spectroscopy and mass spectrometry, including Argon laser development of high-powered carbon dioxide and ultraviolet lasers.

In 1977, Dr. Bridges was appointed a Professor of Electrical and Optical Engineering at Caltech. His work at the Institute has included continued on page 4

Fantasticks is Fantastic

The Fantasticks is the world's longest-running musical," said Carl F Braun Professor of Theatre Arts production of this musical is an excellent example of why this is true.

To do the show well requires strong individual performances combined with an easy ensemble intimacy, and the cast fulfills these requirements almost perfectly.

The most outstanding performer is Susan Cave, who plays the part of Louise, The Girl. Her never-flagging, always-in-tune voice and her vibrating acting bring a particularly poignant edge to the part of the naive girl who learns about the world the hard way. Also excellent is Dean Elzenga as Mait, although his acting seemed a bit stiff at times in the first act.

Demonstrating panache and comedy in their supporting roles are Robert Oliver as The Boy's Father and Howard Johnson as The Man Who Dies. James Garvey, who also produced the show, shines in his dual role as The Girl's Father and The Actor, playing each laugh perfectly, if a little too excessively.

Because the production is staged in limited space, audience is in extremely close proximity to the actors, requiring them to project their characters without appearing to be overpowering. Fortunately, The Fantasticks is very intimate in conception and works well in this setting.

Peter Felker as The Narrator and Patricia Houseworth as The Muse provide the necessary sense of magic, mystery, and imagination.

The choreography by Janet de Ruvo is a bit campy, but then the comedic parts of the musical are just as campy also, and rightly so. Overall, the actors' movements fit the music easily and are appropriate for the situation.

Most impressive is the cast's boundless energy that forced the audience to become involved. Had this not been the case, the musical would have died a quick and early death in the first act, and no one would have stayed around for the surprises of the second.

The "orchestra" of Wendy Caldwell, Heather Graham, and David Zobel provides excellent musical support for the cast, and their sensitive performances added greatly to the impact of the action.

An important part of the success of this production is that it never loses the simplicity that is a basic element of this musical. It is never pretentious; it merely examines the harsh realities of youth growing from the "scenic" of the night into the "evening of the day." It guides the audience's imagination into the joys and sorrows of love and everyday life. It reminds us that there is always hope for those who believe just a little that we can reach happiness if we try hard enough to overcome the cynicism projected by the real world.

The cast's sincerity in reminding us, together with the magic of the musical elements of the show make it a wonderful escape from the mundane that goes by too fast. You will want to linger after it is over to savor the experience.

—Bill Craven

Home Sweet Art

American Architecture Opens at Baxter Gallery

Caltech News Bureau

This exhibition of "The Common American Bungalow" and "Tile, Stucco Walls and Archways: The Spanish Tradition in the Popular American House," will be shown simultaneously at Baxter Art Gallery from November 10 through December 11. Both exhibitions are in collaboration with the "Home Sweet Home: American Domestic Vernacular Architecture" project organized by The Craft and Folk Art Museum in Los Angeles and involving 15 southern California institutions.

The "Bungalow" exhibition is curated by Robert Winter, professor of the history of ideas at Caltech, and curator Winter present to answer questions from 1 to 3 pm, and a self-guided tour of an area in Pasadena called "Bungalow Heaven." The exhibition is free except for the self-guided tour. All the event is free except for the self-guided tour.

The "Bungalow" exhibition will trace the style of architecture from its development in Gaudi's work. continued on page 4

VDTs

Dangers for Computer Users

Today, millions of employees and students work on VDTs and their use has become widespread, providing better services at lower costs with great time savings. The tremendous growth in their use, however, has resulted in concern for the health of the operators who work with the equipment for prolonged periods of time.

Four major types of hazards are associated with the operation of VDTs: visual, physical, psychological and radiation.

Visual problems are generally classified as "eye strain" and include symptoms of soreness, itching, burning, dryness and general discomfort, frequently leading to the need for refitting of corrective lenses. Most of the physical hazards occur because of ergonomic problems and result in musculoskeletal fatigue resulting in back, neck and shoulder pains; whereas psychological stress seem to be produced by the repetitive nature of the work and the feeling that one's performance is controlled by the machine.

Radiation hazards which can include cataracts, cancer, reproductive disorders and general malaise may be produced by the leaking of both ionizing and non-ionizing radiation in effective equipment, but has not been proven to be a hazard in the general workplace.

—Be Leisure, R.N., N.P. Young Health Center

Subduction

Kimberly Carr seduces Dick Feynman in Subduction, a dramatic sketch by Greg Tomko Pavia. This will play with Solstice and The Two Corvus this weekend and next weekend.

Showtimes

Nov. 4 8:00 pm
Nov. 5 8:00 pm
Nov. 6 8:00 pm
Nov. 7 8:00 pm
Nov. 8 8:00 pm
Nov. 11 8:00 pm
Nov. 12 8:00 pm

All shows are in Ramo Auditorium. Tickets are $5 general and $3 for students and are available at the Office of Public Events. For further information, call 356-4652.
The gadfly

No. 3

An examination of student life at Caltech

Centers of Attention

Given that this campus often acts more like seven campuses than one, there should be more establishments around that are dedicated to non-house affiliated gatherings. Two possibilities are a campus student center and a general dining hall.

When students are done with classes, they go back to their own house and lounge in the particular spot in the house that most house members lounge in. There, they read the newspaper, trade small talk and unwind. Even within a house, there are many such gathering spots. At 6:30, the Caltech campus becomes utterly deserted because that is dinner time in the houses, regardless of whether everyone is hungry yet, or if it fits in with students' schedules. Dinner is a major social event of sorts when everyone has to be in the house sits down to eat and then shares announcements concerning house activities and school-wide events. If you are not present, there is no way of finding out what went on unless you ask someone who happens to have remembered all the announcements. It is hard to pinpoint a single place on campus where a person from any house can go to be filled in on what's happening because there is no such place.

A really nice way to accommodate meals, news, relaxation, and activity in a more flexible and unified fashion would be to have a student center and something resembling an all campus dining center. Winnem Student Center may be a center, but not of students. Chandler Dining Hall is not suited for students on board and can not come close to servicing even half the campus at any given time.

In all the schools that I have visited, the student center is a bustling focal point of students and activity. They usually consist of a bulletin board serving as a message and information center, a ticket booth to events, a place where students can buy some food (burgers, drinks, etc.), and plenty of comfortably informal chairs to sit out in. Other common features in student centers are newspapers and magazines from all parts of the nation, a campus radio center, a bar/cafe, a post office, a bookstore, and some recreational features ranging from video games to a bowling alley. The main purpose of such a center is just to serve as a convenience for the students. It is a place to stop over between classes, to hang out after class, to meet friends, to unwind and or to become informed about what is going on on campus. It is also a useful place to buy stamps, books, cards, tickets, or make phone calls. Such a center is invaluable to off-campus

continued on page 5

The Caltech Y Fly-by

Friday...November 4

Noon Concert — The Robin Flower Band on the Quad. Presented in conjunction with the OWC.

Stanford Marching Band — Do not miss the concert at 2 pm on the Aih steps.

Art Workshop — Let your creativity run wild...3-6 pm, the Y Workroom.

Party and Concert — A party for the Stanford students will be held on the Caltech Walk, 9 pm until ?. The Y presents 'The Press' for your listening enjoyment. Everyone is welcome.

Sign-ups — Today is the last day to sign up for the L.A. Philharmonic's November 10 performance.

Wednesday...November 9


For more information, please call 356-6163.

letters

"Changes Should Be Very Carefully Considered"

To the Editors:

Over the last three weeks, I have become involved in the current questioning of the student house system and rotation procedures, and although I have heard many people voicing misgivings about the current system, I have also met many people who seem reluctant to make changes, even though these people feel that such changes might be of benefit. The reason for this reluctance is obvious: the system presently in existence may have flaws, but changes should be very carefully considered, because of the danger of producing a system with even worse problems.

I myself held this attitude during the controversy over the Honor System last year, and during the first part of this year, when the Open Forum Letter came out, but I have since learned more about the history of the present system, and have changed my mind. I think that there is good evidence to indicate that such extreme caution need not be exercised when considering altering the procedures, or the structure of the student houses. This is not to say that such changes should not be closely examined, but I do not think that the danger of instituting worse problems, and that argument alone, should deter the possibility of changes. It is true that the present system has existed unchanged since 1961, when a change in the rotations was made. At that time, freshmen

listed all of the houses, in order of their preference, and there was considerable pressure to put on the more popular freshmen to list one or another house first on their list. At that time, there was much disagreement about the advisability of making changes to the existing system, just as there is now, but the changes were made, and many of the problems which seem to have been of concern no longer exist, although there are other problems which were not solved. I feel that this is only partially due to the care with which the changes were considered before being made, though I do not intend to say that the care used was unnecessary or that the people who were responsible for the changes succeeded by accident.

I think that the reason for the hesitation of whatever changes were made is that they were not followed blindly, but were considered in practice, as time went by and small problems became apparent. From the historical material I have read and the conversations I have had with faculty members involved in the last set of changes made, I received the impression that even the system we have now is not quite what was intended. It has been slightly altered in both procedure and intent as time

continued on page 4

Social Notes

Stanford; Party; Beerball

by Dan Schwartz

Tonight at 9 pm on the Olive Walk, the ESC is pleased to end midterm week with an incredible ?house party with the Stanford Marching Band. Students at a couple of other schools in the area have also been invited.

"The Press" will perform dance tunes until about 1 am and the Rudbeckia Bar will be serving up your favorite beverages. Free beer, soda & munchies too!

Special note — please do not park your car on the Olive Walk Friday. Also, please move your bikes or other assorted stuff from the walk so it won't interfere with the party.

Remember to wake up in time for the Frosh-Soph Beerball game tomorrow at 1 pm. All classes are invited.

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Letters and announcements are welcome. Include all contributions should be the author's name and phone number and the intended date of publication. The editor reserves the right to abbreviate letters so please keep them concise.

Two copies of the office mailbox, room 107 Winnet. The deadline is Friday at 3 pm.

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The Inside World... Yusuf Teykhabian

The Inside World... Bob Bolender (Bi), Lisa Cummings (Po), Ken Hahn (Bi), Doreen McClure (Po), Scott Rowland (Ft), Bill Calabasa (Da), Gordon Smith (Lh)

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?1983. THE CALIFORNIA TECH
See the Colors, Digitally

by John South

This weekend the Pasadena Center Conference Building will be the site for Color Expo 83, a collection of exhibits and seminars for Color Computer enthusiasts. Sponsored by Computer Publishing Company (Color Computer Magazine) and hosted by the Los Angeles Color Computer Users Group, the show will feature educational applications of the Color Computer. The education theme has garnered proclamations from the mayors of Los Angeles and Pasadena declaring November 4-6 as Color Computer weekend.

The hardware focus will be on the Radio Shack TRS-80 Color Computer and its workalike, the TDP-100 and Dragon computers. Recent price reductions and expanded capabilities have increased interest in a wide range of uses from games and educational programs to accounting, engineering calculations, external systems control, graphics, and word processing. Hard core computer buffs like the assembly language and the options of BASIC and compilers with an OS-9 operating system.

The local Color Computer user group initiated the idea for a Color Computer exposition here, then secured the Mayoral proclamations and the sponsorship of Computer Publishing Company. Members of the users group will be at the Expo to answer questions and welcome anyone interested in the Color Computer or its workalike. Group members will also be showing the results of their cooperative project, an adventure program of a motorcycle race through the desert. The show at the venue will be able to climb on a Suzuki ATV wired to control the software driving the video screen display.

There will be a wide variety of exhibits, with the latest in hardware and software and a good selection of computer books. Color Expo 83 features many hands-on exhibits and a chance to question well-known authors on the Color Computer. Seminar topics include programming, graphics, animation, and how to write your own computer games. Tens of thousands of Color Computer users are expected from all over the country, so having the Expo in Pasadena presents a special opportunity for Techers. Admission is $8, but discount passes are available at The Caltech Y. The show will be open 4-10pm November 4, 10am-6pm November 5, and 10am-4pm November 6 at 300 East Green Street. For related story, please see VDTs on page 1.

The Inside World

Blacker: Blacker got off to a rather clumsy start when two Rose Bowlers were caught in the act and had to spend the better part of two days in the Pasadena jail. Soon after their return, the house psychologist tried the old shaving-cans-in-the-flame-test trick. Fortunately, only the newly acquired fire screen was destroyed.

David Lesserman faces a trial when John Dvorsky (a Blacker alumnus) appeared on the show as a guest and sold Molokai jokes. Blah blah blah blah Blacker blah blah blah Blacker blah /—/ edit. The weekend's Disneyland trip ended earlier than planned for several when they were expelled from the park for hanging a sign from the Matterhorn. The sign's contents remained undisclosed for security reasons. The Canoodle Upper P. doorway was finally installed during Tuesday's gopher attack. Also on Tuesday, Pizter returned after an extended vacation, who knows where (but he's not telling). - fan from the Monastery

Debary: The BDR Party was a fine success. We'd like to thank all the people who made it possible, especially the Dean, the Master, and ASCIT.

The interhouse and wrestling tournament has been cancelled due to lack of time. A growing community of chen fandicks seems to be making the lounge more interesting, and a good old fashioned bar. Vintage pinball machine seems to be snapping up spare minutes of time, in a few wizards manage to pull off ten free games at a shot.

- Bill Callahan

Excitement!

This is the challenge you've waited for, trained for, hoped for.

This is your chance to join the company that's on the leading edge of every high-performance technology in the semiconductor industry.

This is your opportunity to interview with Advanced Micro Devices.

Advanced Micro Devices
Campus Interviews For Graduate/Undergraduate in Electrical Engineering/Computer Engineering/Computer Science

November 15

AMD chose the wave as its symbol to show the excitement of fast advancing technology. We'll give you all the thrills your career can handle in exchange for your talent and ideas.

Sign up now at your Career Planning and Placement Center. If our schedule is full, send your resume to Barbara Toochman, Manager, College Recruiting, Dept. CTPI14, Advanced Micro Devices, 901 Thompson Place, Sunnyvale, CA 94086. An equal opportunity employer.

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SPECIALTIES: SHISH—KABOB, SHOARMA, SOUVLAKI—STEAK HOMEMADE PASTRIES: BAKLAVA, BURMA, AND NAPOLEONS

For the Entire Month of November

A free root beer float to all Juniors, Seniors, and Grad Students Faculty, Grad Students, Attend!

Mondays and Tuesdays are Beer Days. Half price on beer.

B. C.: On Lake Avenue
1/2 Block North of California

Buy Caltech Cards and save 20%
William Bridges from page 1 studies of opto-galvanic effects, optically-assisted laser iso- type separation, millimeter and submillimeter wave systems, and laser spectroscopy.

Dr. Bridges is a member of the National Academy of Sciences and the National Academy of Engineering. He is a Fellow of the Institute of Electrical and Electronics Engineers and the Optical Society of America. Included among his many professional activities is service as a member of the Optical Society Board of Directors and Chairman of the Society Objectives and Policies Committee.

In addition to his research and administrative work, Dr. Bridges has been highly regarded as a teacher by the students of his optics courses. He has twice received Distinguished Teaching Awards from ASCIT, in 1980 and 1982. In addition to the Braun Professorship, the Braun family has also contributed significantly to the Institute in the construction of Braun House (the graduate residence); new athletic facilities, including a swimming pool; and the Braun Laboratories in Memory of Carl P and Winifred H Braun, Caltech’s largest biological research facility, dedicated last year.

Carl Braun, a mechanical engineer, founded and headed C P Braun & Co, one of the world’s leading engineering and construction companies. In 1926. He served as a member of the Caltech Board of Trustees, and from 1937 until his death in 1954, was a member of the Associates. His wife, Winifred, also active in both Institute affairs and community service, died in 1980. The Braun’s son, John G Braun, has been a member of the Board of Trustees since 1959.

Stan Waterman Beckman Goes Under Water on Saturday

Five short films highlighting diving in different parts of the world in "The Stan Waterman Show," Caltech’s spring diving club, the "Kelpers," in cooperation with Caltech Public Events brings the presentation to Beckman Auditorium on Saturday, Nov. 5 at 8 pm.

"Lost Treasure of the Conception" is an excerpt from a special produced by Waterman for CBS-TV. In this film, Bert Webber, a small-town boy from Pennsylvania, discovers and salvages the richest wreck of our time after years of research, poverty and near misses. This segment focuses on the final discovery of the "Conception" and the way in which it was salvaged.

Consider Changes from page 2 has passed, and now works fairly well, in spite of whatever objections were made of it (probably valid ones) when it was being considered.

I feel that the many changes made in the student houses and rotation system in the past, and the lack of disastrous results after any of these changes, indicate that even changes which would cause problems in theory may in practice be found to be usable. This position is shared by many of the faculty members I have spoken with, who seem much room for improvement in the present system, and feel that the bottle-

Home Architecture from page 1 century, to its popularization in America between the world wars, when firms published catalogues and bungalow patterns books for individual builders, and companies offered "ready-cut" prefabricated houses to assemble.

A more individual expression in home-building developed simultaneously in southern California and Florida. "Spanish Tradition" will feature this middle class American "spec" house characterized by tile roofs, arched entrances, patios, and stucco walls reminiscent of Moorish Spain and the Califor- ni mission period. Many of these homes had names like "The Cortez," "Siesta," and "Señorita." Like the bungalow, the Spanish house spread

Frosh Vs. Soph Beerball TOMORROW AT 1:00 Freshmen and Sophomores Show Your Prowess!!

Come and watch the carnage! There will be plenty of beer, soda, and munchies for spectators as well.

The festivities will go 'till 4:30 and there may even be a spectator game.

Sponsored by the JUNIOR CLASS with the help of ASCIT, the MASTER'S OFFICE, and the DEANS.

TEACH IN JAPAN

Persons with a degree or job-experience in such fields as engineering, business administration, finance, pharmacology, linguistics, languages of computers wishing to teach Japanese adults for one or two years in Tokyo and other parts of Japan should write to:

International Education Services
Shin Taiso Bldg.
10-7, Dogenzaka 2-chome, Shibuya-ku
Tokyo, Japan 130

Instructors employed by I.E.S. will teach Japanese businessmen and engineers English as a second language and the terminology in their own field of study or job-experience in Japan.

No Japanese language is required for classroom instruction. Prefer persons with one to two years job or teaching experience, of master's degrees. An information and training are given in Tokyo.

Information on salary, transportation and housing can be obtained by providing International Education Services with a detailed resume and letter indicat- ing an interest in the position.

Personal interviews will be held in Seattle in December 1983, and in San Francisco and Los Angeles in early January 1984. Selected applicants are expected in Tokyo March through August, 1984.
Guarnieri Quartet Returns to Tech

Sunday Afternoon at Beckman

Returning to Caltech for the ninth time, the Guarnieri String Quartet will appear Sunday, Nov. 6 at 3:30 pm in Beckman Auditorium. This is the second concert of the Cole- man Chamber Music series. Included on the program will be Beethoven's Quartet in E-flat Major, Op. 74; Kodaly's Quartet No. 2 in D Minor; and Schubert's Quartet in D Minor, D. 810 ("Death of the Maiden").

Arnold Steinhardt and John Dailey, violins; Michael Tree, viola; and David Soyer, cello, are the original members of the Quartet, which was founded in 1966 at Vermont's Marlboro Music Festival. Arnold Steinhardt made his solo debut at the age of 14 with the Los Angeles Philharmonic Orchestra.

The Quartet has toured cities throughout the United States, Canada, Europe, New Zealand, Australia and Japan. All members of the Quartet have been appointed as Professors of Music for the 1983 academic year at the University of Maryland.

 Fifty free tickets and 50 tickets at $4.00 each will be available to Caltech students with a Caltech student I.D. beginning Tuesday, Nov. 1 at 10 am in the Caltech Ticket Office. Regular student prices for this concert are $9.50-$8.00-$6.50-$4.50. The Caltech Ticket Office is located just north of the Beckman Auditorium parking lot. For information, call campus extension 4652.
**Weekly Sports Calendar**

<table>
<thead>
<tr>
<th>Day</th>
<th>Date</th>
<th>Time</th>
<th>Sport</th>
<th>Opponent</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fri.</td>
<td>11-4</td>
<td>7:00 pm</td>
<td>Women's Volleyball</td>
<td>L.I.F.E.</td>
<td>L.I.F.E.</td>
</tr>
<tr>
<td>Sat.</td>
<td>11-5</td>
<td>TBA</td>
<td>Cross Country</td>
<td>Pomona Invitational</td>
<td>Claremont Cty Cl.</td>
</tr>
<tr>
<td>Sat.</td>
<td>11-5</td>
<td>TBA</td>
<td>Water Polo</td>
<td>SCIAC Tournament</td>
<td>Whitnert</td>
</tr>
<tr>
<td>Sat.</td>
<td>11-5</td>
<td>10:00 am</td>
<td>Soccer</td>
<td>Redlands</td>
<td>Redlands</td>
</tr>
<tr>
<td>Sat.</td>
<td>11-5</td>
<td>1:00 pm</td>
<td>Fencing</td>
<td>UCLA</td>
<td>Cal State L.B.</td>
</tr>
<tr>
<td>Sat.</td>
<td>11-5</td>
<td>1:30 pm</td>
<td>Football</td>
<td>Menlo-San Spartans</td>
<td>Caltech</td>
</tr>
<tr>
<td>Sat.</td>
<td>11-5</td>
<td>2:00 pm</td>
<td>Women's Volleyball</td>
<td>Pacific Christian</td>
<td>Caltech</td>
</tr>
<tr>
<td>Tue.</td>
<td>11-8</td>
<td>7:30 pm</td>
<td>Wrestling</td>
<td>Biola (Scrimmage)</td>
<td>Biola</td>
</tr>
<tr>
<td>Wed.</td>
<td>11-9</td>
<td>4:00 pm</td>
<td>Water Polo</td>
<td>U.C. Riverside</td>
<td>Caltech</td>
</tr>
<tr>
<td>Wed.</td>
<td>11-9</td>
<td>7:00 pm</td>
<td>Women's Volleyball</td>
<td>Christ College</td>
<td>Christ College</td>
</tr>
<tr>
<td>Fri.</td>
<td>11-11</td>
<td>7:00 pm</td>
<td>Wrestling</td>
<td>Cal State Long Beach JV</td>
<td>Caltech</td>
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<tr>
<td>Sat.</td>
<td>11-12</td>
<td>TBA</td>
<td>Water Polo</td>
<td>SCIAC Tournament</td>
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<tr>
<td>Sat.</td>
<td>11-12</td>
<td>10:00 am</td>
<td>Soccer</td>
<td>Soccer Club</td>
<td>Caltech</td>
</tr>
<tr>
<td>Sat.</td>
<td>11-12</td>
<td>11:00 am</td>
<td>Cross Country</td>
<td>NAIA Dist. 3 Meet</td>
<td>La Mirada Park</td>
</tr>
<tr>
<td>Sat.</td>
<td>11-12</td>
<td>1:00 pm</td>
<td>Fencing</td>
<td>U.C. Santa Barbara</td>
<td>U.C. San Diego</td>
</tr>
<tr>
<td>Sat.</td>
<td>11-12</td>
<td>1:30 pm</td>
<td>Football</td>
<td>Edwards Air Force Base</td>
<td>Edwards AFB</td>
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<tr>
<td>Sun.</td>
<td>11-13</td>
<td>TBA</td>
<td>Water Polo</td>
<td>SCIAC Tournament</td>
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**Football Team Wins Again!**

Now at 4–1 after San Diego Victory

by Ath Man at Large

The Caltech Beaver football team defeated the San Diego Cougars, 7–0, last Saturday, raising their season record to 4–1. The game was filled with mistakes, with the defenses dominating on both sides.

The scoreless tie in the first quarter as Jonathan Brown scored on a 24-yard run. Phil Scott added the extra point, and the scoring for the half was set. Caltech moved the ball well in the first quarter, as Brown rushed for 86 of his 153 yards in that period.

The last three quarters were made up of a series of good defensive plays, punts, turnovers, and penalties. The Cougars’ defense held Brown to only 67 yards on 21 carries and pressured Phil Scott much he could not set up effective passing attack.

Caltech’s defense, led by George Kalilwaa’s four interceptions, repeatedly repelled the Cougars scoring efforts, for the San Diegoans to punt in 12 of their 19 series.

The Beavers, who rank 10th nationally by National Collegiate Foot Association, will face Southern California Oddirr tomorrow at 1:30 here at T.

**GSC Volleyball Scores**

Results of Wed. Oct. 26

A LEAGUE

**Face beat Ruddock by an unlisted score**

Jet Setters strafed Brave Force 15–12, 15–10

Tigers tossed our Up-Setters 15–7, 15–5

Kong’s Killers mangled Fleming 15–5, 15–7

HPS outlasted Page 10–15, 15–3, 13–6

Six Hitters ganged up on Aero 15–3, 15–7

B LEAGUE

Smashers smashed Dogh Dogs 15–4, 15–6

Tire Irons stopped Magna Force 15–10, 15–13

Reynolds Numb-ers outpointed Overpaid Amateurs by a little

Scurves drained Hydraulic Jumps 15–5, 15–12

Face came on like Gangbusters 15–7, 16–14

Strange & Strange crushed Juggs 15–5, 15–13, 15–7

We’re Mudd splashed Beasps 15–13, 3–15, 15–3

**Women’s Volleyball Team Dives and Jives**

"Physics Sucks" Strategy Not Used

by Busy Sue

Last Friday, October 28, the women’s volleyball team played great!! We blocked, we hit, we dived, we jived!! And you will have the chance to see us play twice more at home on Saturday, Nov. 5 at 2 pm against Pacific Christian and on Monday, Nov. 14 at 7 pm against Oxy.

Friday’s game was against Pomona. They beat us in two games, 15–10, 15–9. They are way taller than we are and it seems that breathing smog only makes them play better. No wimps on their team. On the other hand, are the tists—we could easily push their vertical jumps in number of precise and areas but out-jump the ball drop given half a chance, we push down on them. Maybe would have won if we’d go so serious and given "PHYS SUCKS" a try...

Anyway, see you Saturday 2 pm.

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Runners Take Fifth
by Thor Feet
Caltech's men's cross country team was stopped short of its goal at the SCIAC Championship on October 29. After leading Claremont a week earlier, Coach Leroy Neal's runners were looking for a second place finish at last fourth place. But Claremont came back to narrowly edge Caltech for the third place in the season, and leave the Beavers in fifth place.
As usual, Senior Steve Stahl led the Caltech effort with a 20:43 clocking on the 4.7 mile course at Redlands. This was good for 20th place overall out of 41 runners. Bob Kelly, running one of the best races of his career, came across the finish line in 28:25. He finished second on the team, 25th overall.
Next for Caltech came three freshmen, John Beck, Mike Jensen, and Darin Acosta. Their respective times of 26:51, 27:56, and 28:11 gave them 25th, 32nd, and 33rd places, and rounded out the scoring for the team. Following them were Robbie Dow (34) in 28:13, and Brian McLain (35) at 28:32. The race was won by Dave Francis of Pomona-Pitzer in a course record time of 25:37.
The team title was claimed by Occidental with 28 points. They were followed by Pomona (41) and Redlands (79). Claremont barely gained fourth with 133 points, and Caltech finished on their heels with 137. Whittier (160) took 11th, and La Verne failed to field a complete team.
Caltech's women's team was also incomplete, but four runners competed anyway. Lieutenant Haase grabbed the 12th spot in a field of 34 runners.

Outfenced by Fullerton
by Chien-Wei Han
The Caltech fencing team lost again to Cal State Fullerton last Saturday afternoon. The men's foil team had a disappointing loss of 0-9. The three foil members, Kurt Anderson, Andre Burgoyne, and Scott Grossman, each succeeded in making several touches against their opponents. Scott fought bravely and almost beat one of his opponents, but lost by one touch. The men's epee team, James Bell and Kenny Bell, lost 1-8. James Bell, with his brute-force style of fencing, finally won his first bout of the season. Kenny also made some fine movements on his opponents.
The men's saber team had a tough competition and also lost 1-8. Lee Sunderland made some nice parries and cuts. On several occasions he outmaneuvered one of Fullerton's best saber fencers. Lee came close to beating another opponent, but lost by one touch.

Peter Konopka also performed well. He was mobile and made good parries. Chien-Wei Han had a difficult bout against his last opponent. His opponent charged at him, and Chien-Wel did the same back. The result was clashes with neither side getting touches. Eventually, using a little bit of finesse, Chien-Wei beat his opponent.
The women's foil team came close to winning, but lost 7-9. Kari Peterson and Daniela Bonafede had good bouts. Kathy Shedy was the leading scorer, winning three bouts. Next came Barbara Turpin and Phyllis Li; both won two each. After the match was over, Kathy and Barbara said they wished they had won those bouts which they came so close to winning.
This Saturday the team members will meet Cal State Long Beach and UCLA at Long Beach. The fencing team hopes they can make enough bouts to win a match.

Stan Waterman
from page 4
turtles and rays on the wreck of the "Yongala.""
Closing this presentation will be "The Sinai Reefs," Waterman and his daughter explore the Red Sea waters along the eastern coast of the Sinai Peninsula. Deep wrecks, venomous reef fish and "The Green Hulk," a 350-pound Napoleon wrasse are set in the framework of the Sinai Desert and the isolated reefs of the Straits of Tiran.
Waterman has been a documentary film maker for a quarter of a century. He has produced films for all three major networks, winning an "Emmy" for Cinematography for his work with ABC's "The American Sportsman Show."
Tickets for "The Stan Waterman Show" are priced at $7.00; students $5.00. They are available at the Caltech Ticket Office, 332 S. Michigan Ave. For further information, call 356-4652.

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announcements

House System Discussion Planned
On Tuesday, November 22, at 8:00 pm in Ramo Auditorium, there will be a large-scale meeting of the students, faculty, alumni and administration members on the student house system, rotation procedures, house traditions, and the general social atmosphere at Caltech. The meeting is being organized by the Master of Student Houses and The Caltech Y, among others. Students who are interested in giving five to fifteen-minute speeches on a topic of present concern should contact The Caltech Y at mail code 218–51, extension 6163. Please give your name and an idea of what you would like to talk about. If you wish more information, contact John Graham at 356–9322, or the Y office.

Oxy-Caltech Orchestra
The Occidental-Caltech orchestra will present a concert in Dabyre Lounge this coming Wednesday, November 9, at 8:30 pm. Featured works will be Dowork's New World Symphony, Honegger's Pastourelle d'Été, and Nicolai's Overture to The Merry Wives of Windsor. This concert will mark the first appearance at Caltech for this orchestra in three years. The orchestra, composed of students, staff, and faculty from both schools, has over 60 members, of whom more than 20 are affiliated with Caltech-/IP. Its director, Dr. Allen Gross, is serving in his first year at Occidental/Caltech, coming from five years in a similar capacity at the University of Louisville.

The concert is free and the public is invited.

Win At Hackenbush
Elwyn Balekamp, co-author of the recent best-selling book Winning Ways, will be on campus November 10 to talk about mathematical games. The talk, also entitled Winning Ways, will be in 151 Sloan at 4 pm. Dr. Balekamp will talk about some of all of the following: generalized Nim (Hackenbush), Frogs and Toads, Dawson’s Eagles, Cutcote, and uncountably many more. After hearing this talk you will be able to amaze even more of your friends than usual.

STANFORD!

The Leland Stanford Junior University Marching Band will cavort on the Athenaeum terrace steps this Friday afternoon at 2.

The 160-member band will be presented for your listening and viewing pleasure by Professor Caltech Y. The University of Southern California will be lining up to do something to do with it, too. The Stanford Indians play the Trojans in the Coliseum Saturday afternoon.

The Stanford Band is mailing a return appearance to Caltech. The Y brought it the campus three years ago. Sometimes it shows up at the Rose Bowl as well. A party honoring the band will be thrown Friday night at 9 on the Quad. A smaller band will provide the entertainment, and Dan Schwartz is that the whole campus community is invited. Members of the Stanford band will spend the remainder of the night sleeping on gymnasium floor Polytechnic School. Their morning they embark for USC.

World Affairs Forum
The Caltech World Affairs Forum is a new group devoted to increasing the awareness of Caltech in politics and human affairs. We will bring prominent speakers to Caltech—people who are known for their knowledge or views in a variety of different subjects. Also, we will conduct regular meetings which will be informal discussions on a particular topic of interest, often with invited guests. The first such meeting will be on Monday, November 7th and the topic of discussion will be American involvement in Lebanon. The meeting will begin at 7:30 pm in the Y Lounge on the second floor of Winnett. Between 7:00 and 7:30 we will be conducting club business and anyone interested may join in.

The World Affairs Forum does not endorse any specific political views—it is an open forum where many different ideological views will be presented. All members of the Caltech community are welcome to join us. For information call a, 448 Craig at 4480, Ed at 4776, or Andy at 6892. Our mail code is 218–51. We hope to see you at our first meeting.

Visual Dynamics
A number of complimentary passes are available for Techers to go to Visual Dynamics: Showcase '83, SIGGRAPH Computer Graphics Conference, here at Tech on November 19 and 20, in exchange for helping out with the administration of the event. Interested? Call Nancy Collier, 439–5194.

Prose Reading
Janet Kaufman, noted poet, will be reading some prose from her forthcoming collection of short stories, "Places in the World a Woman Could Walk," on Thursday, Nov. 17 in the Judy Library at 4 pm. She is also the author of a book of poems, "The Weather Book," which is an AWS Series Selection.

Visual Dynamics

Prose Reading

Visual Dynamics

Prose Reading

Freshman Meeting
On Wednesday, November 9, at 8:30 pm in 469 Lauritsen, there will be another Freshman Perspectives meeting. These discussions are intended to collect those concerned about student life, both grad and undergrad, to develop possible remedies to specific social problems. THESE ARE NOT JUST GRIPES SESSIONS!! We are trying to get answers to many questions, such as:

- Why do most undergrads have no friends in other houses?
- Why do most undergrads know so few grad students?
- Why do most undergrads see the above questions as irrelevant?

If you are a freshman, or other interested undergraduate or upperclassmen are invited too—and you have opinions, either positive or negative, about Caltech social life, please come and voice them.

Shabbat & Potluck
There will be a Shabbat service and potluck dinner tonight (Nov. 4) at 7 pm in the Y Lounge. Bring a veggie/dairy dish if you can. Sponsored by the Caltech Hills-Jewish Community.

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