

Drop Day

the party

Saturday, Dabney
follow the music



All your base are belong to us.

Caltech Glee
Club concert

See story on
page 2

The California Tech

VOLUME CII, NUMBER 18

PASADENA, CALIFORNIA

FEBRUARY 23, 2001

CALTECH HONORS LINUS PAULING IN CENTENNIAL CELEBRATION

BY JOHN OH

On Friday, March 2, Caltech will host a celebration honoring what would have been the 100th birthday of Linus Pauling, one of the greatest names in science.

Beginning at 10:00 a.m. at Beckman Auditorium, in a program free and open to the public, the day will feature six prestigious speakers from around the globe who will give talks not only on fields that Linus Pauling researched, but also on their personal reflections on Pauling.

Linus Pauling received his Ph.D. in chemistry from Caltech in 1925, joining the faculty where he remained until 1964, and was a Professor of Chemistry Emeritus and director of the Linus Pauling Institute of Science and Medicine until his passing in 1994.

He has twice received the Nobel Prize, the first one in Chemistry in 1954 for his fundamental research on chemical bonds. His second Nobel Prize was the Nobel Peace Prize in 1962 for his efforts to discourage development of nuclear arsenals after World War II.

The event, "Frontiers in Science - A Centennial Celebration of Linus Pauling," is presented in two sessions. The first session is chaired by David A. Tirrell, the McCollum-Corcoran Chair Professor of Chemistry and Chemical Engineering, and also the Chair of the Division of Chemistry and Chemical Engineering here at Caltech.

This session features technical talks by Elias James Corey, Sheldon Emery Chair Professor of Harvard University and recipient of the 1990 Nobel Prize for Chemistry, and by Richard A. Lerner, President of the Scripps Research Institute. Jack D. Dunitz, Professor of Chemical Crystallography at the Swiss Federal Institute of Technology will give a more reflective talk titled "Looking Backwards, Glancing Sideways."

PLEASE SEE PAULING ON PAGE 5

Millikan Library's future in doubt

BY ROBERT KERN

Last term, an "ad-hoc Library Taskforce" was formed to "identify ways of improving library service to the campus while optimizing the use of financial, physical and personnel resources." Five meetings and a term later, the question remains: What will happen to Millikan Library?

Millikan, built as a monument to Robert A. Millikan (a scientist who worked at Caltech from 1921 to 1949), was originally built to house various administrative and academic offices. Only in the last thirty years has it been used as a library.

Problems with sufficient space and space use across campus have arisen over the past few years, and the job of the Task Force is to investigate whether the housing of books in Millikan is making the most efficient use of its nine floors and to explore alternatives to the central, open stacks currently in place.

According to Charles Peck, Chairman of the Task Force, the committee is considering several options to make better use of Millikan.

One idea is to build a new library somewhere less central to campus and move the books there. Partially or fully warehousing the books has also been considered. The current library would then be used to house ad-

ministrative offices like Public Relations and Development.

One advantage to re-vamping the library system would be that current technology can be incorporated into the plans. For example, many periodicals are now available online and downsizing bookshelf space for them would be more efficient. Also, a system is being considered where every book has a small microchip on it that would allow librarians to physically locate them very quickly.

However, that system comes with a price: the stacks will be closed to library users. One must request specific books from the librarian. A faculty member could also request that certain books be placed on open stacks for a temporary period much in the same way that professors place books on reserve for their classes' use.

Issues of the structural stability of Millikan have also been discussed. There is some concern that Millikan's floors would not be able to safely tolerate more weight than they already carry.

Librarians, two of whom are serving on the Task Force, have noted that the layout of the library is awkward; it does not have the typical expanses of reading space that is conducive to doing work there.

Some are becoming nervous about the prospect of a partially

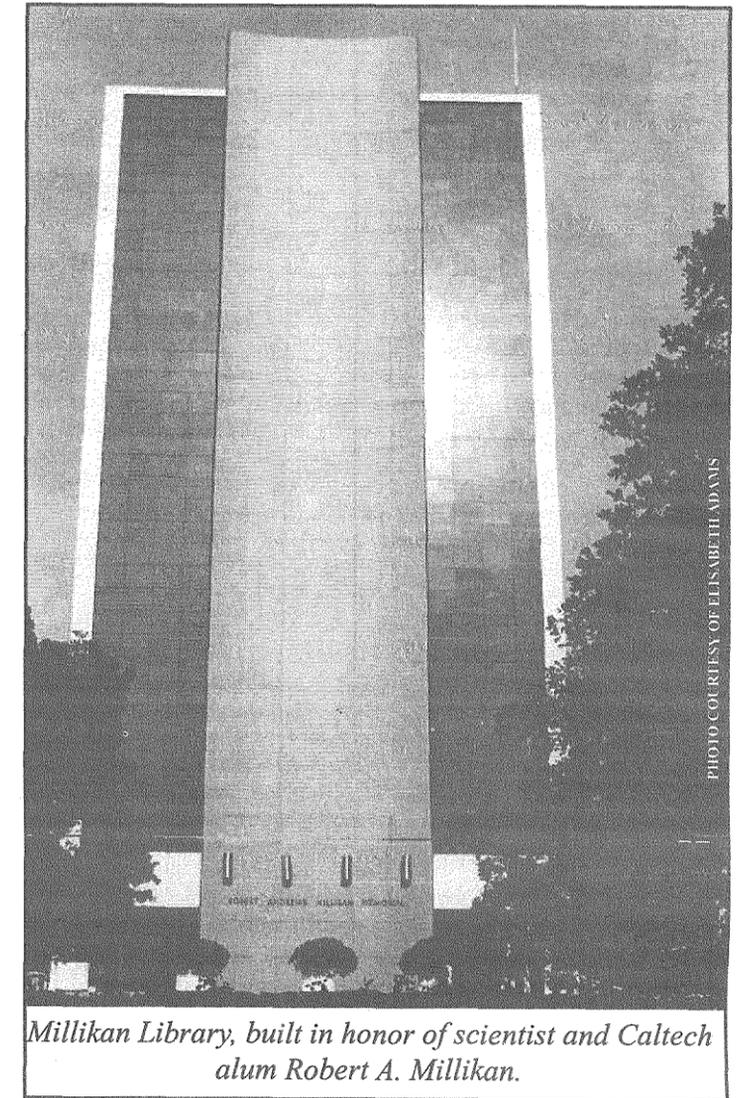


PHOTO COURTESY OF ELISABETH ADAMS

Millikan Library, built in honor of scientist and Caltech alum Robert A. Millikan.

or fully warehoused library. Closed stacks imply no free browsing, an essential component of library research for some.

Morgan Kousser, a professor of history and social science, commented that "with that kind of library, it would be impossible

for undergraduates to do serious book and journal research in any subject. With a closed library, Caltech will become a second-class institution."

A survey of library use will soon be distributed by the Task Force as part of their investigation.

Beaver basketball concludes against Oxy

BY TECH STAFF

Coming off a tough loss on the road to Redlands on Monday night, the Caltech Beavers took to the floor Thursday night in their last game of the season against the



Beavers tip off against Occidental in their final game of the season.

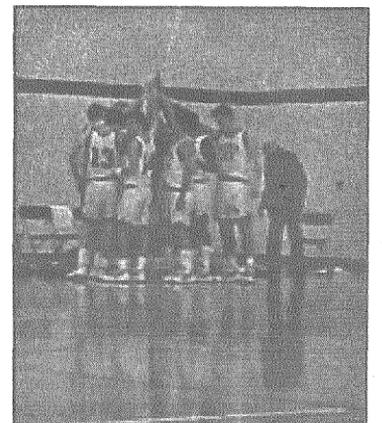
Occidental Tigers in a hyped-up conference match. The night was also eventful because it was the last game in a Caltech uniform for two senior Beavers, Chris Arneson and Jay Turner. Also in the news was sophomore

Jon Bird, who continues to lead SCIAC in rebounding (10.6/g) and field goal percentage (63%).

The first 5 minutes saw the Beavers hanging tough with the taller Tiger team. However, by the middle of the first half the Beavers were being overpowered by a Tiger lineup that boasted 9 players over 6 feet tall. At halftime the Beavers

trailed by the score of 42-18. The second half saw a rejuvenated Caltech team try to get back into the game. Bird finished with 18 points to lead the charge while Paul Updike added an impressive reverse layup. However, the Beavers ran out of gas at the end and fell to the Tigers 76-52 in a tough loss to end the season.

The Caltech Beavers would like to thank all the fans for their continued support throughout



Men's basketball players have a team huddle.

this season.

Inside the Tech

The Usual	Features
Foxtrot 6	Outside World 3
Dilbert 6	Ticket Stub 3
The Dean's Corner 7	ASCIT Minutes 4

NEWS

Of Strings and Things

BY JON FOSTER

"I said once as a joke that the definition of interesting mathematics was that math which plays a role in String Theory," related Dr. John Schwarz. "I don't think that's a joke anymore."

Dr. Schwarz presented a brief glimpse into the history of string theory and his important role in it at a lecture sponsored by SEDS (Students for the Exploration and Development of Space) last Wednesday night. He traced the theory from its conception, as an answer to the problems of the strong nuclear force, up to its current dream - a theory of everything. The talk was aimed at Caltech undergraduates and was remarkably accessible.

The essence of the talk was about how theoretical physicists sought to fix the problems of the original string theory, formalized in 1970. This theory only described bosons (particles with integral spin), it contained ta-

chyons (particles with -1 times the mass constant which imply an unstable vacuum), and it called for a 26-dimensional universe. The second theory, which Schwarz helped formulate in 1971, was "much better," describing both bosons and fermions, increasing the tachyon up to -.5 times the mass constant, and reducing the number of necessary dimensions to 10.

Then Quantum Chromodynamics came along in 1973, and the necessity for string theory as a description of the strong nuclear force disappeared. But, as Dr. Schwarz remarked, there were still all sorts of "mathematical miracles" that fell out of the equations of string theory, and this was "one of the reasons people got caught up in it." In 1974 Schwarz and Scherlk discovered in the math of string theory a massless spin 2 particle which would interact like a graviton (the basic carrier of the gravitational interaction). This solved the flaw of extra dimen-

sions in a nice way, for the theory of general relativity said that gravity created the dimensionality of space.

In 1984, the first revolution in string theory (now called superstring theory) occurred. Certain versions of string theory were discovered which allowed for some of the realities of nature (such as parity breaking) without being internally inconsistent. Furthermore, a method was developed for picking a preferred symmetry. Suddenly, the world of superstring theory was transformed as an influx of people entered the field - "it was really like a phase transition" remarked Dr. Schwarz, which earned him a bit of laughter.

Schwarz briefly outlined the current state of the theory. 11-dimensional M-theory has at last fulfilled the dimensional limits imposed by supergravity, and experiments in the near future at Fermilab and CERN should either find supersymmetric particles or rule out their existence.

A Multilingual Choral Experience

BY KEVIN COSTELLO

No fewer than nine languages will be filling Dabney Hall this weekend when the Caltech Glee Clubs give their annual winter concert. The performances will be held on Friday and Saturday night at 8:00 and admission is free for the general public.

This year the concert's theme is "Folksongs from Around the World," and pieces will range from Cretan dance tunes to Hawaiian love songs to American Spirituals and Field Yells. (Other languages include German, Hebrew, Swedish, Hungarian, Japanese, and even Serbian!)

The Caltech Glee Clubs consist of approximately 75 undergraduates, graduate students, and members of the surrounding community.

The Men's Glee Club has been a Caltech staple since the early

1920's, and the Women's Glee Club was a natural extension once there actually were women at Caltech to join it. No auditions are required, and membership in the group is open to anyone who wants to join.

Future events this year include hosting the Pacific Southwest Intercollegiate Choral Festival, and a combined performance of Carl Orff's Carmina Burana with Occidental's choral groups and the Caltech/Occidental Orchestra.

Come out this weekend for some good singing and good fun, not to mention good food (did I mention most concerts have had free cookies afterwards?).

Better living though topological interferometry

BY ELISABETH ADAMS

On a handheld globe, Mt. Everest would only be a fraction of a millimeter high - probably not enough relief to feel. But the Earth's surface has plenty of topology, as Dr. Michael Kobrick, a research scientist at JPL, demonstrated in the latest Watson lecture on Wednesday evening. His presentation, entitled "Planetary Phrenology-the lumps and bumps of Earth," used a variety of pictures, models, graphs, and movies to describe what went into the recent Shuttle Radar Topography Mission (SRTM), which succeeded in mapping almost the entire earth with radar interferometry.

Because of the long wavelengths used (principally 6 cm), the shuttle-based radars are able to see through clouds, and, in one intriguing set of photographs, the huge billows of smoke from a volcanic eruption.

The most remarkable aspect of SRTM, however, is the fact that it completed its scan of the earth in 11 days, passing over almost every point in the scan area (which excluded only Antarctica and the north pole regions) at least twice. This continuous, highly accurate scan was the result of some very clever thinking, Dr. Kobrick modestly admitted. The first idea was to attach a very long, unfoldable antenna to the space shuttle so that two radar assemblages could simultaneously gather data. The slightly different paths of the light would create fringe interference patterns, which could then, through computer model-

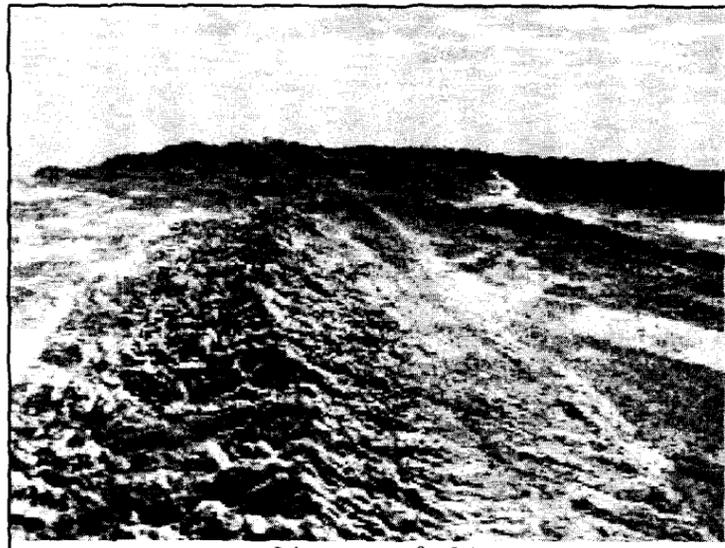
ing techniques, be turned into 3-D topological images.

The other clever idea was how to use the radar to cover a wider area. Using a flashlight to demonstrate, Dr. Kobrick showed the traditional pattern in which radar beams scan across the earth's surface, a straight line. Using the ScanSAR mode, however, the radar beam is moved in rectangular swaths perpendicular to the direction of motion - leading to a lower intensity image, but one which covers a much wider area. The width of these swaths, JPL's radar engineers calculated, was 225 km.

As Dr. Kobrick described it, he had one of those "special days" (akin to graduation, a wedding, or the birth of a child) the day when "I divided 159 into 40,000 and multiplied by $\sin(60)$." This is a reference to his fortuitous discovery of the maximum number of orbits he could make, 159, given payload and atmospheric restrictions and still be able to map each spot twice for interferometry purposes.

This number is critical in calculating the gap between the criss-crossing ribbons of data, which is found by multiplying the number of orbits by the earth's circumference, adjusted for the angle at which those orbit cross the equator. The answer is 218 km - which, being just less than the limit of the size of the swaths made by using the ScanSAR technique of radar, meant that there would be no gaps at all in the data.

The mission flew exactly one



*It's not our fault!
It's really the San Andreas faultline, gathered from the Shuttle Radar Topography Mission.*

year ago and was a great success. Nearly 12 terabytes of data were gathered which, though not expected to be completely analyzed for another year, already reveal quality on par with maps of the same areas made by the US Geological Survey.

Dr. Kobrick ended the talk with visions of the many uses for this data, ranging from databases for pilots to avoid crashing into unexpected terrain, to analyzing where to put cell towers to get the best cell phone coverage. The most esoteric use was "forensic topology," such as reconstructing what happened when a Marine jet flying in the Italian Alps severed the lines of a cable car in 1998, killing 20 people.

As for the future of radar topology mapping, Dr. Kobrick showed a map of the Hector Mine earthquake of October 1999 where the topology had been removed, leaving only a

centimeter-level map of the movement of the fault. Since it is theorized that the earth also moves minutely before earthquakes, Dr. Kobrick suggested that someone should equip a plane with a radar array similar to the one he used and have it fly every day over the San Andreas fault line-just in case.

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Ticket Stub & Outside World

The Ticket Stub

by Justin Ho

Hannibal (C-)

A moratorium should be placed on sequels to all movies with the exception of mobster sagas, (and only because of the Godfather). The audience's imagination is usually more adept at inventing alternatives to "and they lived happily ever after" than a slate of writers and producers, even if the film happens to be an adapted screenplay from a novel. The very fact that we sit with the purpose of being entertained for 2 hours instead of reading the sequel is a testament to short-attention span which implies that we're not looking for the same old, same old.

"Hannibal" escapes from the taboo of being repetitious, but following on the heels of the brilliant "Silence of the Lambs" there are few options that it can take. Hannibal Lecter is no longer institutionalized so the creepy restraint in the former, of a savage beast locked in a plexi-glass cube, isn't a factor. In the interest of creating a distinct,

nuanced identity from its predecessor, "Hannibal" takes the gory route. Admittedly, I squealed like a little pig at some parts, but I've also seen worse. Lacking in the psychological depth and sense of immediacy that pervaded "Silence of the Lambs", Hannibal is relegated to a mere shadow of its younger self.

In "Hannibal", Lecter is seen establishing himself as a Renaissance scholar in Florence, Italy. Here he is protected in a blanket of security and anonymity, but this makes him careless. A police detective, working on the disappearance of the museum staff-member, begins to suspect the true identity of the learned man, and Lecter only manages to escape because the agent is reckless and headstrong.

Lecter is pursued by multiple forces, masterminded by a filthy rich puppeteer. The man of influence, Mason Verger, was a convicted pedophile sent to be one of Lecter's patients, and thus lucky to be alive. The encounter left Verger's face skinless. His physical aberrations and cartoonish immorality establishes Hannibal as a protagonist. As perverse as that sounds, it works for a while, but the film does not maintain the visceral ickiness of Verger's plan for Lecter. In order to ensnare the Dr. Lecter residing in cognito, Verger establishes a handsome reward for knowledge of

Lecter's whereabouts and capture.

Clarice Starling, the morally incorruptible heroine of the original, returns with a stronger façade but the stalwart soldier on the outside encases a fragile soul which is more vulnerable. Through a series of incidents she becomes the bait in Verger's trap. The relationship between Lecter and Starling is exploited to draw a flustered Lecter back to the States. It is here that the film reaches a disjunction. The classicism of the Florentian atmosphere and the quick pace of the Italian story give way to anticlimatic plot plodding in the States, and Lecter's didacticism turns grating. There is never a sense of danger for Starling's life. Rather, Lecter assumes the role of mentor and lecturer, preaching about good and bad and the betrayal by the agency to which Starling had dedicated her life. But the monologue is boring.

One of the interesting features of "Silence of the Lambs" was the ambiguity as to who truly held the power in the relationship. The attraction Lecter felt toward Clarice was discernible, but Lecter was intelligent enough to allow the semblance of his affection to make his captors believe in his frailty, perhaps just so that he could manipulate Starling while her supervisors were under the impression that they had uncovered a

PLEASE SEE HANNIBAL ON PAGE 5

The Outside World

U.S. Bombs Iraq

Last Friday (Feb. 16), 24 U.S. and British aircraft targeted 20 Iraqi radar control installations that had increased their frequency, threatening U.S. jets in the no-fly zone. Of these 20, two are reported to be back in operations as of yesterday. Bush said that the bombing was "routine mission to enforce the no-fly zone" (*yeah, sure, in other words: "Daddy did it, so I wanna do it too!"*). Thursday, another missile was fired in northern Iraq for similar reasons. One problem that was noted by the Feb. 16 bombing was that half the radar installations targeted were not greatly damaged because the long range, satellite-guided bombs failed to hit directly on target (*no worries, Bush will make sure to test them often*).

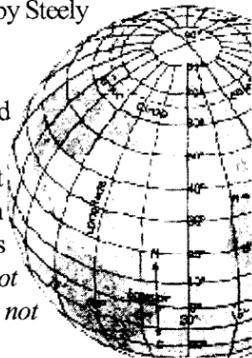
Spying for Russia

On Sun. Feb. 18 Robert Hanssen, a 25 year FBI agent was arrested for selling classified secrets to Russia. Hanssen was arrested at a park near his house in Virginia while he was allegedly dropping off classified material. The investigation on Hanssen shows that he has been actively selling secrets since 1985, and has collected \$1.4 million in cash and diamonds from the Russians (*diamonds? Who steals secrets for diamonds?*). Colleagues say that Hanssen was very sharp; in fact he knew "everything" about the FBI and its operations (*wait, it gets even better*). One of his "sellings" led to the unmasking of three Soviet double agents working for the U.S.; two were executed by the Russians. The FBI refused to say where it got its lead on Hanssen (*hmm, bet the Russians are doing some investigations now!*).

Grammys (act like you care, people!)

Record of the Year: "Beautiful Day" by U2
 Album of the Year: "Two Against Nature" by Steely Dan (*say who?!?!?!?*)
 Song of the Year: "Beautiful Day" by U2
 Faith Hill, U2, and Steely Dan each received three Grammys

On another note, Eminem, who won best rap album, sold out by not only singing with Elton John, but also when accepting his Grammy (*thought he'd something noble like not accept the Grammy? He's controversial, but not that controversial*).



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 [11:30] 2:05 4:40 7:20 10:00

2 Academy Award Nominations
MALENA (R)
 [11:45] 2:10 4:35 7:00 9:45

FAITHLESS (R)
 [11:30] 2:35 5:40 8:45

SNATCH (R)
 [11:45] 2:20 4:55 7:30 10:05

2 Academy Award Nominations
POLLOCK (R)
 [1:00] 4:00 7:00 9:50

2 Academy Award Nominations
O BROTHER, WHERE ART THOU? (PG-13)
 [11:45] 2:20 4:55 7:30 10:05

10 Academy Award Nominations
CROUCHING TIGER (PG-13)
 [11:30] 2:05 4:40 7:20 10:00

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ASCIT

A.S.C.I.T.
Minutes

FEBRUARY 15, 2001

Present: new BoD; old BoD
Emma Kang; Eric Tuttle, Laura Brogoch, Jason Cardema, Sean McHugh, Chris Elion, Ted Jou, Megan Smith; Guests: Dave Guskin, Jeff who,s surname shall remain nameless, Jon Dama, departing Tech Editors (Dana Sadava, John Oh, Jon Foster), Elisa Chiang

First meeting of the new BoD, alias Stapleton regime, called to order at 11:10 pm.

Quick glances around the room reveal a few hang-overs from the past. So we haven't dismantled everything from the old administration after all.

Guests

Jeff comes in peace, at the request of Martha-Helene, and in search of \$100 for the computer he donated for the DVD library. A few whispers are exchanged, checks change hands, all is well.

The Tech Editors come to say "we quit." They demand severance pay, and the room erupts in laughter. You knew what you

were getting into before you became what you are [*whatever...-Eds.*]. Yes, but we expected ASCIT Minutes and a Ticket Stub. There is silence. The secretaries glance at each other.,oops. The Ticket Stubber casts his eyes

downward, the community will have no cinematic joy this week. * Shrug*

Elisa comes on behalf of the Y inquiring about planning for the jointly-sponsored trip to the Getty. The only expense of concern is renting a shuttle for students, which would come out to a \$250-\$250 ASCIT-Y split. Tentative date Saturday April 14th, which is early third term, and not in conflict with other activities. It is agreed, the date is chosen, and judgement has been cast.

Jon Dama, web guru, speaks. Three accounts have been created on Donut for the FDAL, President, and Secretary. Passwords will be passed from each outgoing officer to the neophyte. Are accounts for all members of the BoD necessary? Yes, please. The old page is in the process of being moved to the new, permanent one. Again, all is well.

All guests have been accounted for, except for Dave who decides to stay and has no

pressing matters. A good observer he is, that Mr. Guskin.

General Meeting

First item of business going around the circle to introduce ourselves. At Martha-Helene's request, we each give our name, status as Old/New BoD and an interesting detail. Sort of like a hybrid between kindergarten and Alcoholics anonymous, I'd say. That means put the beer away.

A review of the written resolutions concerning appointments for the Academic Review Committee (ARC) and Conduct Review Committee(CRC) takes the floor. As the first resolution stands, the ARC will have control over nominating representatives to the core curriculum steering, academic policies, curriculum, library, and education outreach committees. This increase in delegated power will come at the consent of the Interhouse committee. The ARC shall demand and review reports from student delegates on these committees, and if the aforementioned proposal appears successful, bylaws and resolutions of ASCIT and the IHC will be amended later.

The CRC presently has not been incorporated into the bylaws, and the rules governing selection of student members

haven't even been established yet. Its more puppet government-esque than ASCIT. To promote our agenda, it is proposed that the position of CRC Student Co-chair become an elected position and that the same rules governing election of the BoC Chair be applied to selection of the CRC Student Co-chair. The remainder of the student representatives shall be appointed by a panel. Who's on that panel? We don,t know yet, but we have some ideas. More later.

Sean takes the floor to give his treasurer's report, but most of us are more interested in his job model-

ing. ASCIT is about \$12000 in the black, with the rest of the term left to go. \$1000 is stuck in unclaimed club funding, and someone owes us money from last year's formal. NOTE TO CLUBS: Pick up your cash dollars if you haven't done so. \$1000 has been designated for Athletics funding, but there hasn't been a use for it yet; meeting with the IHC Ath Man for the delegation of funds to come later. The BoC squad brings up their broken laptop. The cost of replacement will be \$1500, which, in conjunction with \$600 for a banquet and \$200 for other expenses comes out to \$900 over-budget for the BoC. ASCIT has money left-over at the moment, so it is determined that the BoC budget will be increased by \$900 for this fiscal year, and slashed by \$900 next year. Also, ASCIT needs to make sure to keep paying the guys for the Web Project and account for maintenance costs. Other reasons for being in the black: the prank fund went under budget as did Multihouse/Interhouse. A surplus has developed from previous years, manifesting in an ASCIT endowment of \$30,000 which we are trying to deplete, but to no avail. Alternatively, the money could be invested with the student investment fund, as the Caltech Finance department lacks the authority to do so.

News concerning the Big T has arrived. Erik Dill had a meeting with the publisher February 20th, and whether or not it is finished, the Big T(that being the one from last year) will go into publication. The only parts that were missing were the index and some advertisements, but parents and graduates are having major hissy fits, so necessity has demanded its release, in whatever form it will take. I hope this line doesn't come back to haunt us. Looking ahead to this year's Big T: Jake West and Den Thap, the Big T editor and Big T business manager, respectively, will need to be trained.

In light of the change of power, keys will be change hands between the old officers and new officers, and the signatures on the ASCIT account at the bank need to be changed. Ted isn't replacing anyone who's on this continent at the moment, so he is presented with a bit of a problem. Appointments for ASCIT-appointed positions will also be made soon. A notice in the Tech will appear next week introducing the positions open and when sign-ups will be posted.

Martha-Helene went to several meetings with administration and faculty over the course of the past two weeks. Caltech does not have a power crisis, but it is requested that computers be turned off when not being used as a nice gesture. Tim Downs has proposed more athletic games against teams like us, and not limited to MIT. A review of the CRC came up quite rosy, people are quite happy. Why doesn't a similar governing body exist for the graduate student population? Hmmm. The University of Copenhagen exchange program was approved which is creating a snowball—other schools may want to join in the exchange consortium, so a committee will be formed to evaluate schools on par with Caltech and worthy of our student-swapping. Also, the Millikan library may transition into something else in the future. Students may have noticed a survey passed out for a week during which students recorded the amount of time spent in the building. The survey was part of an investigation on Millikan library usage. Closer to home, perhaps, ideas are also being bounced back and forth concerning the renovations of the student houses.

Meeting adjourns at 1:05 a.m., Friday morning, to be followed by a Donut Man run at 7 am the next morning. Martha-Helene and I are quite the Renaissance peoples.

Evidently,

Justin

also need a Movies Chairman, and introducing a new appointed position this year: Jamroom Man(ager).

California Tech

The newspaper, documenting life at Caltech on a weekly basis, needs a business manager(s) who will be responsible for all funds belonging to that publication and to serve as the only one(s) empowered to transact business in the name of the Tech. The role of business manager(s) will take into effect immediately, because the righteous editors need your help in bringing the weekly

PLEASE SEE ASCIT ON PAGE 5

Systems & Information Technology Group

Q. Where did the Caltech "Wisconsin Card Switch" tricksters go to work?

Q. Who built the throttling engine that put astronauts gently on the surface of the moon?

Q. Who's building a broadband satellite link to . . . anywhere?

Q. Who's building the "Tactical Internet", based on wireless links and mobile computing?

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See you at the Pre-Meeting on Monday, February 26th and at your interview, Tuesday, February 27th.

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Announcements and News

ASCIT

CONTINUED FROM PAGE 4
news to press.

Big T

The Big T is the undergraduate yearbook with sections on academics, athletics, clubs, student houses, and senior pages. It's disappeared for a bit lately but is making a grand comeback. ASCIT will appoint students to serve as editors for the 2001-2002 school year, responsible for the selection and preparation of all content excluding advertising material. A business manager is also needed for the 2001-2002 school year to handle advertising and funding.

little T

The handbook created for undergrads includes information on Caltech services, student activities, student government, Pasadena services, transportation, entertainment, restaurants, the student directory, important documents like the ASCIT By-laws and randomness. It may have been confused for a Calvin and Hobbes anthology this year. We are searching for an editorial staff who will select a theme and update the database in time for publication early in the 2001-2002 school year. ASCIT will also appoint students to serve as business managers to handle funding and negotiate with the publisher.

Totem

The Totem is dedicated exclu-

sively to representing the literary and artistic capabilities of the Caltech community, consisting of professors, staff, graduate students and undergraduates. Indulge in non-science and serve as a member of the editing staff.

Election Chair

The Election Chairman has the power to appoint members to form an election committee that will serve to oversee all elections associated with ASCIT. This committee will manage polling stations, record votes, and report the results in a judicious manner to ensure the integrity of our elections.

Movie Chair

The Movies Chairman will head the task force granted the power to operate and maintain the ASCIT Movies equipment, to choose the movies which will be shown each term if ASCIT movies come back from the grave, and manage the ASCIT DVD library and the ASCIT screening room. The Movies Chairman appointed by ASCIT will have the authority to appoint members to his/her task force to achieve these ends. Occasionally, the movies committee will work in concert with Caltech Business services to organize campus-wide shindigs at a rented movie-house playing a new release.

Jamroom Man(ager)

Keep music alive, and organized and tidy! ASCIT, in conjunction with the approval of the

departing Jamroom manager, will appoint a member of the Caltech community to oversee the affairs of the jamroom in the interest of keeping musicians happy.

Sign-up sheets will be posted outside SAC 33 from Friday, February 23 through 5 pm Friday, March 2. Leave your name and e-mail address so that ASCIT can contact you concerning an interview time. Get involved, work for the machine, and be our friend! Questions? **C o n t a c t** justinh@cco.caltech.edu (Evidently, Justin, ASCIT secretary)



IHC Secretary, IHC Athletics Manager, and Food Committee Chair. Signups will begin Friday, Feb. 23 and will be up for one week. The IHC will interview and fill the positions during the week of the 5th.

Descriptions:

IHC Secretary

The duties of the IHC Secretary are to preside over the Committee in the absence of the Chairman, to keep minutes of the proceedings of all meetings of the committee, to send reminders of when meetings are

HANNIBAL:

CONTINUED FROM PAGE 3

weakness. The question as to whether Lecter was a conniving opportunist or truly a lonely man captivated by someone as good as he evil is answered in "Hannibal" with a self-effacing manner. It's hard to walk out of the theatre without suspecting that Hannibal is nothing more than a perverted cradle-robber.

Much can be said about off-screen violence also. When the camera suddenly shifts to the discovery of a gruesome find, there's true horror, not for the apparent victim anymore but the discoverer. When Hannibal is moved into the role of title character, the slayings become mat-

to occur, update the IHC web page, and scheduling meetings and interviews. Current Secretary: Vanessa Sih (vsih@its.caltech.edu)

IHC Athletics Manager

The duties of the IHC Ath Man are to oversee interhouse athletics, and Disco challenges, to intervene in disputes regarding athletics, update the IHC Sports webpage, and to act as a general liaison between the students and the athletic department.

Food Committee Chair

The duties of the Food Committee Chair are to preside over, to organize, and to schedule the weekly meetings of the interhouse food committee.

ter of fact, desensitizing, and predictably immature. The film is so quick to bring gore to the audience's eyes that it withholds suspense and psychological torment. Lecter is reduced to a petty homicidal maniac, as opposed to someone who isn't necessarily worthy of our respect, because that would be the wrong word, but at least our nightmarish dread.

PAULING:

CONTINUED FROM PAGE 1

The second session is chaired by Caltech's latest Nobel Laureate, Ahmed H. Zewail, Linus Pauling Chair Professor and recipient of the 1999 Nobel Prize for Chemistry. Alexander Rich, William Thompson Sedgwick Chair Professor of MIT gives a personal reflection of Linus Pauling, and Charles H. Townes, University Professor of Physics at UC Berkeley, recipient of the 1964 Nobel Prize in Physics and Thomas A. Steitz, Eugene Higgins Chair Professor at Yale University will give technical talks.

According to Dr. Tirrell, this event has been in planning for over a year, with the goal of acknowledging and preserving the memory of the great strides made in physics, biology, and chemistry by Linus Pauling. The topic of the talks given reflect the research of Linus Pauling, with topics on biology and physics intertwined with an emphasis on chemistry.

PEOPLE BUILDING COMMUNICATIONS SATELLITES SPACE SYSTEMS LORAL

Lift off.

Space Systems/Loral of Palo Alto is seeking May and June 2001 graduates to help build the next generation of telecommunications satellites. Lofted into high earth orbit on giant Atlas, Delta, Ariane and Proton rockets, these 5,000 kg machines provide a wide variety of essential communication services including telephony, paging, direct broadcast television, and CD-quality radio.

Space Systems/Loral is a great place to launch your career. All new graduates who are offered employment with SS/Loral are encouraged to enter the College Hire and Leadership Development Program, a two-year training and mentoring course that includes 4 different engineering assignments, classes on spacecraft design and space business, a mentoring relationship with a senior engineer, and regular social activities with your fellow recruits. Space Systems/Loral currently has the following opportunities:

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Mass Properties Engineer
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Telemetry & Command Databases
Payload Systems Engineer

ADVANCED SYSTEMS

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Systems Analysis
Communications Science
Spacecraft Engineer

POWER

Mechanical Design/Battery
Mechanical Design/Power Engineer
Electrical Design/Power Engineer
Chemical Design/Batter Engineer
Manufacturing Engineer

MECHANICAL PRODUCTS

Propulsion Engineer
Controls Mechanism Products Engineer
Thermal Engineer
Solar Array & Deployable Products Engineer

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Antenna Mechanical Engineer
Antenna Electrical Engineer
Composites Engineer

CONTROLS ENGINEERING

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Controls Software Engineer

RF ELECTRONICS

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RF Passive Microwave Electronics Design Engineer
RF Microwave Test Engineer
RF Microwave Product Design Engineer

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Comics

DILBERT® by Scott Adams

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WHAT IS THIS STRANGE AND BEAUTIFUL FEELING INSIDE OF ME? WAVES OF ECSTASY ARE PULSING THROUGH MY SOUL. THIS IS WHY I ONLY GIVE POSITIVE REINFORCEMENT ONCE A YEAR. I'M ALL TINGLY!

I EXPERIENCED SOMETHING CALLED POSITIVE REINFORCEMENT TODAY. I'M ADDICTED TO IT NOW... BUT IT'S WEARING OFF... MUST GET MORE... SAY SOMETHING NICE ABOUT ME! FOR A CRAZY WOMAN YOU DON'T DROOL MUCH.

I'M ADDICTED TO POSITIVE REINFORCEMENT. I NEED SOME DELIVERABLES SO I CAN BE PRAISED AGAIN. RESULTS

I INADVERTENTLY GAVE ALICE VERBAL PRAISE. IS SHE ADDICTED? SHE'S BEEN LYING AND STEALING TO GET MORE. SHE LEAVES US NO CHOICE. I HAVE TO PROMOTE YOU TO MANAGEMENT.

HELLO, ALICE. I'M YOUR SOUL. YOU'RE A MANAGER NOW; YOU WON'T BE NEEDING ME. HERE'S A CLAIM TICKET IN CASE YOU GET DEMOTED OR LEARN TO PLAY SAX.

ALICE THE MANAGER HOW DO I COPE WITH THE EMPTINESS OF HAVING NO SOUL? TRY DOING THIS WITH YOUR TEETH WHILE YOU DANCE. IS THERE ANOTHER WAY? I CAN TEACH YOU TO PLAY AIR GUITAR.

THE SNOW IS MELTING! THE SNOW IS MELTING! WARM WEATHER MUST BE COMING! FINALLY! FINALLY! FINALLY! HEY! YOU CAN ALWAYS TELL WHO PRAYS THE HARDEST IN CHURCH.

MISS CHRISTOPHER? ABOUT THIS AFTERNOON'S TEST... WE FORGET— WAS IT CHAPTER FOUR YOU SAID TO STUDY, OR CHAPTER FIVE? WE'D HATE TO STUDY THE WRONG ONE. I SAID TO STUDY CHAPTERS 12-46. I THINK I HATE STUDYING THE RIGHT ONES MORE. CALM DOWN. IT'S JUST A PAGE EVERY 30 SECONDS.

YAAA! ANY CHANCE OF LEARNING YOUR "UNDO" COMMAND? MIND IF I SNAP A QUICK JPEG FIRST?

YOU SHOULD HAVE SEEN ME IN MATH CLASS TODAY, MOTHER! I WAS ON! I MEAN, I WAS ON! YOU DID WELL, EH? NO ONE COULD BAT THEIR EYELASHES AS CUTELY AS I DID! WE HAD A REALLY HUNKY SUBSTITUTE TEACHER. MAYBE IF I WORE A WIG, I COULD PULL MY HAIR OUT WITHOUT CRYING.

I SAVED YOU A CUP. YOU REALLY ARE TRYING TO CUT BACK.

I THINK I LIKED IT BETTER IN THE DAYS WHEN WE COULDN'T FIND OUR ROCKETS AFTER LAUNCHING THEM.

OTHELLO

by William Shakespeare

February 16 - March 4
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 Sundays at 2 pm
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Dean

Dean's Corner

Honor the system

by Jean-Paul Revel

having to know a minimum of facts. Without a factual background it is impossible to think, and besides, if pushed to the limit it would mean having to continuously reinvent everything, ball bearings and wheels too. Louis Pasteur, one of the founders of modern biological science, expressed it well when he said (something like) "discovery will only favor the well prepared mind"

Research ability is innate for some, but most of us can profit from training. At Caltech a very popular way to acquire the needed skills is to do a SURF in the summer; a great chance to meet with professors and explore in a variety of research fields. One major problem that you have to contend with now is that SURF applications have to be in by March 1. Not much time left to find a laboratory in which to work (pretty redundant phraseology! laboratory means just that, a place to work) and to

write a proposal. If you haven't yet done so, hurry to the web at ([/www.its.caltech.edu/~surf/2001/index.html](http://www.its.caltech.edu/~surf/2001/index.html)), and consult Slick the Cat who professes: "Surf now, do everything else later". Well, OK. But don't take that too literally; there are plenty of other things to be done (you know, brushing your teeth, going to classes, doing your homework, attending recitations, who knows what else.)

The very day after you have turned in your SURF application, i.e. next Friday, March 2, you can hear a series of lectures by a bevy of illustrious researchers from around the country. They will gather in Beckman Auditorium to celebrate the 100th anniversary of the birthday of Linus Pauling, certainly one of the greatest researchers and educators to work at Tech (see <http://www.paulingexhibit.org/exhibit/early.html>). So, all of you, go to see and hear starting at 10 am. At the end of his life (he passed away in 1994) Pauling mused "I was born at the beginning of this century, in 1901, and

am living close to its conclusion—a fine period to have been a scientist. No century before this one has experienced such changes in the way we humans live, do our work, or even think." Yes Linus, and few have contributed as much as you during their career.

It is ironic for someone whose contributions to science have been so important, that many know him for the wrong reasons. Many have only heard his name because of his work on vitamin C as a cure for the common cold and cancer both. But that, I believe, is of importance mostly as a reminder that previous achievements are not a guarantee of infallibility. Besides the work (inspired by Ava Helen, his wife) which led to the Peace Prize, his real achievements are mostly known in scientific circles. Any of these individually would ensure him a place in the scientific Pantheon. Altogether they form an amazing record of achievement. There were at least 3 areas where his ideas were seminal, and some others where he missed just by a hair. His first coup was to place the understanding of the bond between atoms on a strong, useful footing. His insight made chemistry a rational enterprise where much could be understood from first principles. He

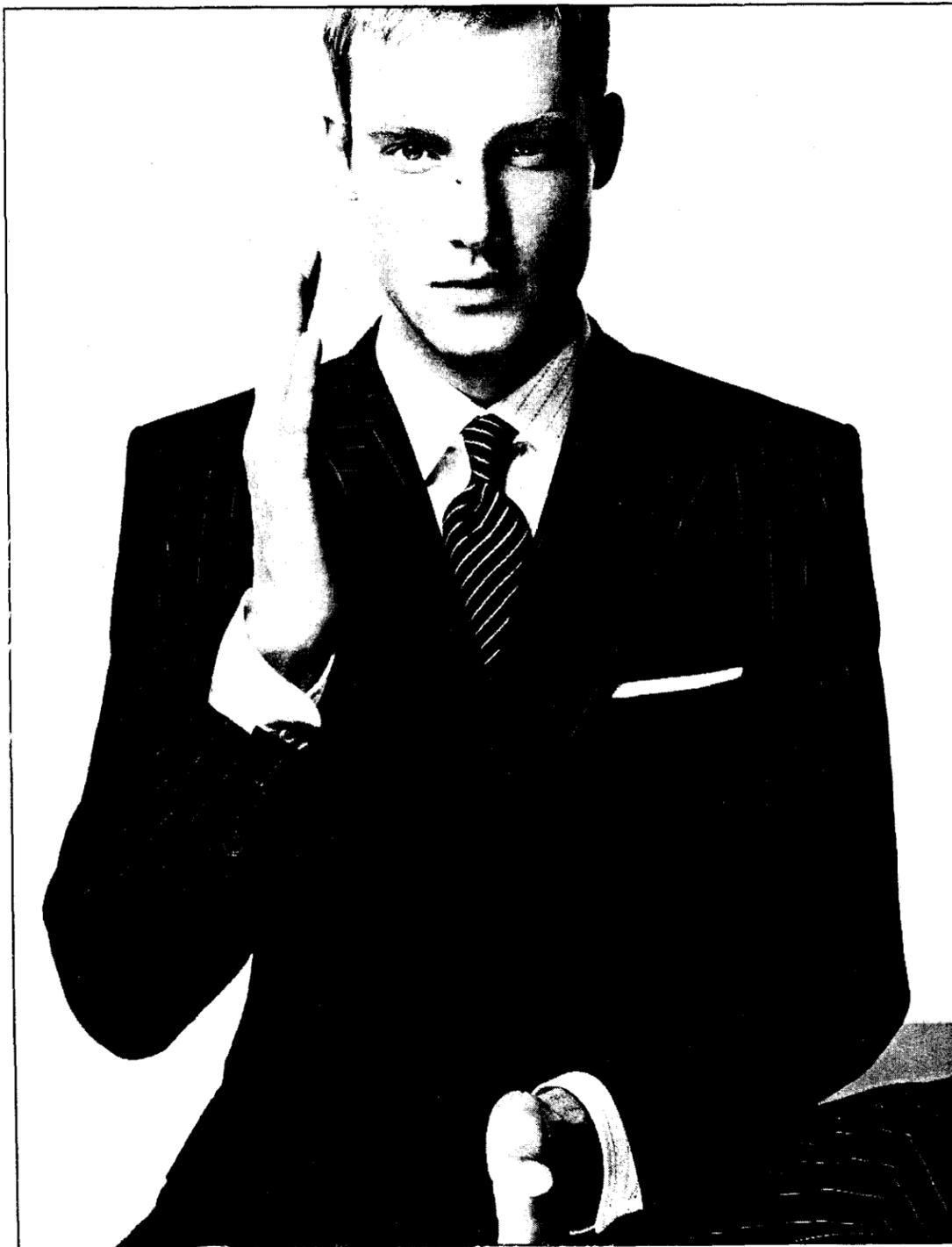
also worked out one of the structural features which form the backbone of proteins, the alpha helix. An ironic twist of fate is that he realized (while in bed with a high fever) that a spiraling structure of amino acids could be stabilized by hydrogen bonds. What would have happened had he already been devoted to using huge doses of Vit C to fight his cold? (I guess not much. Then, as now, it is excreted) He was in a heated competition with Watson and Crick in trying to work out the structure of DNA. He also arrived at a seminal understanding of sickle cell anemia as a molecular disease. He and his students showed that the red blood cells of sickle cell patients contained a diseased (mutant) hemoglobin with a distinct electrophoretic mobility, later proved to be due to the substitution of glutamate (a negatively charged residue) by a valine (a hydrophobic amino acid, which plays a major role in sickling). So come to celebrate Linus Pauling with some of the people who knew him well. Come and hear from top researchers describing their work in celebration Linus Pauling's centenary. See you there..

A bientot

Jean Paul Revel

One of the things that sets Caltech apart is the emphasis that we at the institute place on research. It is seen not only as a way to find out about nature, to understand the wonders and mysteries of the world(s?) around us, but also as a way to teach. Part of the reason that this approach works is the quality of the students (and profs, of course) who are here. But it is not enough to be very bright. To be a successful researcher one must develop a mental discipline, including a careful attention to many details, and the ability to always approach things with an open mind. While one needs a hypothesis to start from, one should be willing to change one's opinions and notions in midstream.

Although we shun rote learning wherever possible, trying instead to derive things from first principles, one cannot avoid



Many will leave an interview.
Few will leave an impression.

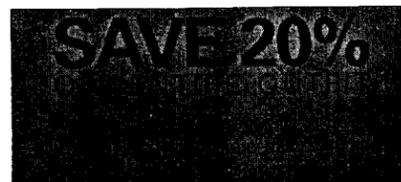
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Mints

ANNOUNCEMENTS

H&SS Division Selected Topics and New Courses for spring term 2000: *Ec 101* On the Rationality of Irrationality - Hefeitz MW 10:30-12 125 Baxter, *H 161* Medieval Knighthood - Brown Organizational meeting M 10am 33 Baxter, *H 161* Civil War and Reconstruction - Hacker T 7pm 237 Baxter, *Law 134* Law Technology - McCaffery TTH 1:30-3 128 Baxter, *Lit 180* Greek Epic and Drama - Pigman Organizational meeting M 2pm Judy Lib, *Lit 180* British Fiction of the 20th Century - Sutherland Organizational mtg. T noon 128 Bax, *Lit 180* American Fiction of the 20th Century - Sutherland Org. mtg. W noon 128 Bax, *SES/PI 169* Who Gets the Kidney? The Philosophy of Social Choice Theory - Hild Th 1-4pm Judy Lib. Copies of HSS course schedules are available in 228 Baxter. Descriptions for all selected topic course are posted in Baxter.

The Caltech Ballroom Dance Club (CBDC) presents a series of free mini-parties held on the campus of Caltech in Winnett Lounge from 9:00-11:00pm, on four successive Mondays: Feb 12, 19, 26, and Mar 5. The parties start right after the Hustle dance class, and music suitable for dancing the Hustle will be played the first half hour. After that, feel free to make requests and/or bring your own music. Everyone is welcome (beginners, intermediates, Caltech affiliates, community members, etc.) No partner is necessary. Refreshments are provided at no cost.

Also presented by the CBDC: **Beginners' Hustle dance class.** This is a 4-week series taught by professional instructor, Sonny Watson. Classes are held on the campus of Caltech in Winnett Lounge from 7:30-9:00pm, with practice continuing until 9:30pm on four successive Mondays: Feb 12, 19, 26, and Mar 5. The cost for the series is, \$24.00 for the four lessons, single lessons are \$7.00 [\$16.00 and \$5.00 respectively for undergraduates]. Everyone is welcome (beginners, intermediates, Caltech affiliates, community members, etc.) No partner necessary. Refreshments are provided.

And: **Beginners' American Waltz dance class.** This is a 4-week series taught by a "volunteer amateur" instructor. Classes are held on the campus of Caltech in Winnett Lounge from 7:30-9:00pm, with practice continuing until 9:30pm on four successive Wednesdays: Feb 14, 21, 28, and Mar 7. The cost for the series is, \$1.0/class, but free to freshmen. Everyone is welcome (beginners, intermediates, Caltech affiliates, community members, etc.) No partner necessary. Refreshments provided at no cost.

Ballroom Dance Party, Fri 9 Mar'01, 8:00-11:59pm at Winnett Lounge. Feel free to make requests and/or bring your own music. Everyone is welcome (beginners, intermediates, Caltech affiliates, community members, etc.) No partner is necessary. Refreshments are provided at no cost.

For last minute changes and other inquiries to about these announcements of the CBDC, see www.its.caltech.edu/~ballroom, or call Don Trask at 626-791-3103

Gay/Lesbian/Bisexual Discussion Group: Looking for a safe and supportive place to discuss issue 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? We invite you to the Gay/Lesbian/Bisexual Discussion Group, which meets on the first and third Tuesdays of each month from 8:15 until 10:15pm in the Health Center Lounge. This is a confidential meeting and does not imply anything about a person's sexual orientation - only that s/he 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 ext. 8331

Community Service Opportunities Abound! The Caltech Y offers students and staff a variety of ways to participate in community service. Opportunities include working with Habitat for Humanity, Union Station Homeless Shelter, math tutoring (on or off campus), reading tutoring, and work-

ing at local hospitals. One-time community service events are planned each term and opportunities for service on a regular basis exist. Undergraduates with federal work-study can receive \$15/hr for their community service work. To be added to the community service interest email list, or for more information about the Community Service Program, please contact Kristin Abbott at kabbott@caltech.edu or call 626/395-3180. Or, stop by the Caltech Y in the Center for Student Services (formerly Keck House) for a complete listing of opportunities.

Paid Summer Internship in Silicon Valley Free room and board, \$1000 spending money for 8 weeks, paid for weekend trips, up to \$5000 for eight weeks of experience with a Silicon Valley startup. Check out www.uofdreams.com and if you have any other questions email melly@its.caltech.edu.

The Caltech Alumni Association has funding available for student organizations. We give preference to organizations that encourage interaction between students and alumni. To be considered for funding, an application form must be completed and returned to the Association ASAP. The form can be found on the web at http://www.its.caltech.edu/~alumni/sfar_funding.html If you wish to receive an application in hardcopy form, please contact Kim Goodfriend at extension 6852 or email kimberly@alumni.caltech.edu.

Dreaming of Spring Break?? Make plans to join the Y for an alternative spring break trip to Tecolote, Mexico from March 25-March 29, 2001. We will travel as a group and volunteer at the local community center to do various service projects that include painting, laying tile, and general repair to the community center facilities. Watch for coming news about an information session, or please contact the Caltech Y for more information at 626/395-6163 or kabbott@caltech.edu.

Join the Caltech Electric Vehicle Club: Everybody's doing it! We've got cars too! For information, email Bryan Tiedemann (tmann@its.caltech.edu)

EVENTS

OASIS Concert of Hope: Oasis, the Organization of Associated Students from the Indian Subcontinent at Caltech, will present "Concert of Hope" for Indian Earthquake Victims on Sunday, February 25, at 7:30 p.m. in Caltech's Beckman Auditorium. The first half of the program will be devoted to Carnatic Music (south Indian classical music) and will feature Geetha Ramanathan Bennett, veena; Frank Bennett, mridangam; and Rusty Gillette, ghatam. The program's second half will feature Creative World Music with the Arohi Ensemble: Paul Livingstone, fretless 9-string guitar; Anand Bennett, bass and mandocello; Leonice Shinneman, Indo/African drum set and percussion; with special guest artist Miroslav Tadic, guitar. This is a student-sponsored event to raise money for OASIS, which is working directly with international organizations to provide relief to the victims of the earthquake. Tickets to this performance are priced at \$25.00, \$20.00, and \$15.00.

Caltech Celebrates Pauling Centennial: February 20, 2001: In honor of the 100th anniversary of the late Linus Pauling's birthday, the California Institute of Technology will host "Frontiers in Science," a day of presentations by world renowned scientists including three Nobel Laureates. The event will begin at 10 a.m. on Friday, March 2, in Beckman Auditorium. It is free and open to the public.

Science, Ethics, and Public Policy LECTURE SERIES: Winter Quarter 2000: Dr. John D. Norton, Professor of History and Philosophy of Science, University of Pittsburgh will discuss Einstein and the Canon of Mathematical Simplicity. Thursday, March 8, 2001 4:00 p.m. Room 25 Baxter Building Refreshments will be served. Seminars are on the Caltech campus and are open to the community at no charge. For information, contact Michelle Reinschmidt at (626) 395-4087 or michelle@hss.caltech.edu.

Tuesday, February 27, Noon: "Business

Resources: This class will focus on business research strategies and methods for finding information on companies and industries. Tuesday, March 6, Noon: "Patents:" Plus Speaker from Technology Transfer: This session will provide a quick review of the patenting process, searching for patents and patent equivalents, legal status issues, and current awareness techniques. Both classes will be held in the Sherman Fairchild Library Multimedia Conference Room, 328. For more info, go to: <http://library.caltech.edu/learning/default.htm>

The Biomedical Engineering Seminar Series will be held during the Winter Term on Friday afternoons at 4:00 p.m. in Baxter Lecture Hall. Medical research and its applications today require tools and methodologies from a variety of disciplines. It is no longer enough to know only molecular biology and genetics or even their relation to complex physiologic systems. This series will highlight new research in engineering, computational science, chemistry, physics, and biology being accomplished by Caltech and JPL investigators, often in collaboration with clinical partners. Scientists and clinicians from elsewhere are also invited. The focus will be on the translation of fundamental science/engineering into clinical/medical devices, approaches, and cures. The presentations are geared for a generally literate scientific audience and not for the specialist. Seminars are open to the public. For information, contact Stacey Scoville at staceys@caltech.edu or (626) 395-6320. A complete list of lecture and abstracts is available at <http://www.cco.caltech.edu/~koonin/biomed.html>

Musical Event, February 27, 2001 Harpsichordist Jennifer Paul, winner of the First Prize of the Erwin Bodky International Harpsichord Competition the Festival van Vlaanderen Brugge International Harpsichord Competition, will present a solo harpsichord lecture/recital entitled "Dancing through the Millennium" at Caltech's Dabney Lounge on Tuesday, February 27, at 8:00 PM. Ms. Paul, who has performed solo recitals at Carnegie Recital Hall, Town Hall in Hong Kong, and the Sydney Opera House, and has appeared as a soloist with Singapore and San Diego Symphony Orchestras, will perform Bach's English Suite No. 3 in G minor, music of the English Renaissance and Baroque, dance pieces by French composers of the 18th century and a mixed bag of works from the 20th century, including pieces by Bartok, Joplin and William Palmer. The concert is free and open to the public and is sponsored by the Division of Humanities and Social Science for benefit of the students enrolled in the division's music courses and the Caltech and larger non-academic community. For more information, call 626-395-4072.

All members of the Caltech Community are invited to audition for the TACIT production of SIX CHARACTERS IN SEARCH OF AN AUTHOR by Luigi Pirandello. Auditions will be held in Ramo Auditorium at the following times: Mon., Feb. 26, 7:00-9:30 pm; Tue., Feb. 27, 7:00-9:30 pm; Sat., Mar. 3, 2:00-4:30 pm. See www.its.caltech.edu/~tacit for related information as it becomes available. The play will be performed during spring term on three consecutive weekends beginning May 25.

Caltech Alpine club and REI present the best films and videos from the 25th Anniversary of the Banff Mountain Film Festival. Exceptional mountain stories

to life when they come to Caltech's Baxter Lecture Hall at 7:30pm on March 28th, 2001. This year's selection includes: The Sahara's Secret Garden a film which explores a secret canyon in the North of Chad, in the heart of the Sahara Desert. Even today, access to the Ennedi Massif is difficult and only a few rare nomads have been privileged enough to penetrate the heart of this astounding massif; Quartzite's Fall: A Wilderness Tale traces the destruction of a calls V+ rapid leading to a federal investigation; and a variety of skiing, kayaking and rock climbing films. See our website for the full lineup: <http://www.events.caltech.edu/alpine>. Tickets are \$6 for Caltech students, \$8 advance, \$10 at the door available through 1-888-2CALTECH or REI, Arcadia 626-447-1062. Come check out the exhibitors faire at the fest, with REI, the Sierra Club, Outland and others. Raffle for cool swag included with the price of admission.

NCIA 5th Annual Conference Technology, Products & Ventures: Creativity & Innovation in Higher Education on March 6-9, 2001 at Crystal Gateway Marriott, Arlington, VA. <http://www.ncia.org/events/conf01.shtml> At the 5th Annual Meeting of the National Collegiate Inventors and Innovators Alliance attend experiential sessions on: E-Team Curriculum Innovation- Technological Entrepreneurship-Team Based Product Design- Interdisciplinary Student Learning. Participate in Hands-on, in-depth workshops on: -Secrets to Success for Technology-Based Innovation -Strategies for Opportunity Assessment & Feasibility Planning -Kinetic Creativity -Hands-on Inventive Problem Solving -Sources of Start-Up Funding for Inventors -Network and share ideas about innovation, creativity, and entrepreneurship in higher education -Learn more about the NCIA's unique grants program, funding innovative courses and inventive student projects -Attend a full day of Pre-Conference Workshops. For more information: E-mail: info@ncia.org Phone: 413-587-2172

SCHOLARSHIPS

The Financial Aid Office has applications and/or information on the following as well as additional undergraduate scholarships. All qualified students are encouraged to apply: Our office is located at 355 S. Holliston, second floor.

The National Institutes of Health scholarship program, the Undergraduate Scholarship Program for Individuals from Disadvantaged Backgrounds (UGSP), targets students who are committed to pursuing careers in health research or basic biomedical science research. The UGSP has strong mentoring and science enrichment components and offers up to \$20,000 per year in financial aid educational expenses. They provide housing during the summer and transportation, and their stipends for the 10 weeks are between \$2,500 and \$4,000. After graduation from college, recipients also "pay back" a year of service for each year of scholarship support, again through paid research training at the NIH. This pay-back can be deferred until after completion of graduate or medical school, and students are encouraged to defer their service pay-back until after receipt of their doctoral degree. For further information and an application go to the Internet site at: <http://ugsp.info.nih.gov>

The American Electroplaters and Surface Finishers Society (AESF) is offering scholarships to upper class undergraduate and graduate students who are interested in careers in the surface finishing field. Appli-

cants must be full-time and majoring in chemistry, chemical engineering, environmental engineering, materials engineering, materials science, metallurgy, or metallurgical engineering. To apply, applicants must submit an application form, statement describing career objectives, list of educational achievements, official transcripts, and three letters of recommendation from teachers, employers, or professors. Applications are available in the Financial Aid Office. Please send completed application materials to: AESF Scholarship Committee, American Electroplaters and Surface Finishers Society, Central Florida Research Park, 12644 Research Parkway, Orlando FL 32826-3298. Entries must be submitted to the AESF Scholarship Committee by April 15, 2001.

The Coalition of Higher Education Assistance Organizations (COHEAO) will award six scholarships to eligible undergraduate students for the 2001-2002 academic year. Applicants must be U.S. citizens; have a 3.75 or above GPA; enrolled at a COHEAO member school; must be entering their sophomore, junior, or senior year at the member school; and only one scholarship per family per academic year will be awarded. Further information about the COHEAO scholarship is only available via the web at www.coheao.com/scholarframe.html. To apply, applicants must submit a typed application, 300 word or less typed essay response, academic letter of recommendation, and sealed official copy of your most recent transcript. Please send application materials to COHEAO Scholarship Committee, 809 S. Marshfield Avenue, M/C 557, Chicago, IL 60612. Application materials must be submitted by March 1, 2001.

John Gyles Education Awards are awards available to students in Canada and the United States. Awards are for all areas of post secondary study. Criteria other than strictly academic ability and financial need are considered in the selection process. A minimum GPA of 2.7 is required. Selected students will receive up to \$3,000. Filing dates for mailing applications in 2001 are April 1, June 1, and November 15. Students can receive an application by sending only a stamped *** (US 34 cent), self-addressed, standard letter size (No. 10) envelope to the following address: John Gyles Education Awards, Attention: The Secretary, P.O. Box 4808, 712 Riverside Drive, Fredericton, New Brunswick, Canada E3B 5G4

The Danville-Alamo Branch of the American Association of University Women (AAUW) is offering scholarship awards ranging from \$500 to \$1,000 to female college students entering their junior or senior year for the 2001-2002 academic year. Applicants will be evaluated on the basis of scholarship, achievement, educational goals, financial need, and campus or community involvement. Female students must be residents of the San Ramon Valley (Danville, Alamo, San Ramon, or Diablo, CA) or graduates of its high schools with a junior or senior standing as of September 2000. For more information and application package, please send your request with a \$0.66 stamped self-addressed large envelope (9" X 12") to: Linda Elsdon, 61 Milano Court, Danville, CA 94526. Entries must be postmarked by April 2, 2001.

To submit an event for the Mints, contact mints@ugcs.caltech.edu or mail your announcement to Caltech 40-58 Attn: Mints. Submissions should be brief and concise. Email is preferred. The editors reserve the right to edit and abridge all material. Deadline is noon Wednesday. Unless specified, all mints will run for two weeks.

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