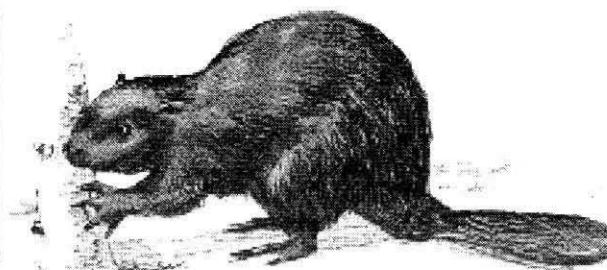


ASCIT Elections!

see page 7



Wellness Week
continues with the
Health Fair today.

Check out the Olive Walk!

THE CALIFORNIA TECH

VOLUME C, NUMBER 14

PASADENA, CALIFORNIA

FRIDAY, JANUARY 22, 1999

ZUBRIN TO PRESENT CASE FOR MARS

BY NATHAN BROWN

For Caltech's legions of Mars-buffs, the impending arrival of national Mars Society founder Dr. Robert Zubrin will be an event to remember. As he has to enthusiastic crowds across the country, Dr. Zubrin will present his "Case for Mars" this Saturday at 4:30 p.m. in Baxter Lecture Hall. Sponsored by the Mars Society chapter of Caltech/JPL, admission will be free of charge.

In 1990, Dr. Zubrin crafted a daring blueprint, Mars Direct, to send the first humans to the Red Planet. With many of his ideas already adopted by the official NASA Reference Mission, "Zubrin is showing us the way," according to admirer and Apollo 11 Astronaut Buzz Aldrin.

But the dream of putting humans on Mars is far from becoming reality. While NASA has become "Faster, Better, Cheaper" since 1989, when a plan using huge spaceships and orbital shipyards put a \$400 billion barrier between humans and Mars, some Mars advocates claim that its current, \$50 billion Reference Mission is still too expensive to gain approval from Congress. NASA contends that its Reference Mission has the safety advantage, and that Zubrin's original Mars Direct, although cheaper at \$30 billion, would trade cost for somewhat greater risk.

The Caltech/JPL chapter of the Mars Society has been working to create a plan that is safer than that of either Zubrin or NASA, while keeping a price tag that will earn congressional support and taxpayer confidence. Working with NASA's Human Exploration and Development of Space-University Program (HEDS-UP), the chapter has looked at everything from a new evolution in the Space Shuttle for blasting off to Mars to twin spacecraft for the voyage home.

"NASA's 1989 effort would have been a great way to commemorate the 20th anniversary of the first moon landing," said lead mission designer and 16-

PLEASE SEE MARS ON PAGE 4

Axline estate wills Caltech \$60 million

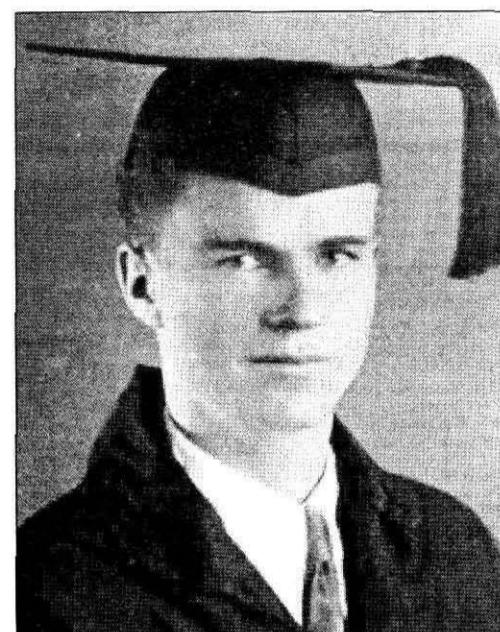
BY TECH STAFF

On Wednesday, the estate of Rea and Lela Axline donated \$60 million to Caltech for the purpose of student support, or student financial aid. The bequest comes after the December 24 death of Lela Axline and is roughly half of the entire estate. The grant is the single biggest donation from any individual donor in Caltech's 108 year history.

The donation comes as a grant to the Caltech endowment, and will increase the annual aid given to undergraduates and graduate students. According to David Baltimore, Caltech's President, the student-aid gift could make Caltech the foremost institution in the world in terms of providing educational support for future scientists and technologists.

The gift is an exciting addition to Caltech's endowment portfolio. As Baltimore expresses, "providing sufficient graduate and undergraduate student aid to attract the very best students to Caltech is one of our greatest challenges."

The Axlines are well-known San Diegan philanthropists. Their estate is also



Rea Axline graduated from Caltech during the depression in 1931

Photo from BIG ARCHIVES
directors and was a life member of the Alumni Association.

Rea Axline made his fortune in a process for coating metals with other metal alloys. The process, patented during the Depression, became especially significant when the US joined World War II. The process was used to coat submarines, tanks, and other military vehicles. Axline's company, Mountain Metallurgic, cofounded by Axline after the war, was later sold to Perkin-Elmer in 1971.

Lela Axline was a renowned painter, teacher, and supporter of art. A graduate of UC Berkeley and Columbia University, she taught at Staten Island University and later, in San Diego, became involved in the San Diego Museum of Art.

Besides its size, the donation was notable in its lack of restrictions. The money was to establish a student aid fund with annual awards to be "made at the discretion of the president or his designee."

The Axlines have provided other gifts to Caltech in previous years, including funding the Rea and Lela Axline Professorship, currently held by economist Colin Camerer.

Panel discusses race and future

BY ERIK DILL

Monday, January 18th, as the rest of the nation was winding up an extra-long weekend of TV watching, the birthday of Rev. Dr. Martin Luther King Jr. was celebrated at Caltech. At 1 P.M., in Ramo Auditorium, a panel of experts convened to discuss how far the issue of race has come from pre-Colonial days, and what hurdles can be expected in the future.

The panel members, consisting of two African-American males, a Caucasian male, a Latina female and an Asian female, each had radically different perspectives on racial issues. The discussion started with a bang: as moderator Tommy Hawkins introduced the panel, the front of the podium fell off. After some quick maintenance by spectators in the front row, Morgan Kousser began the discussion.

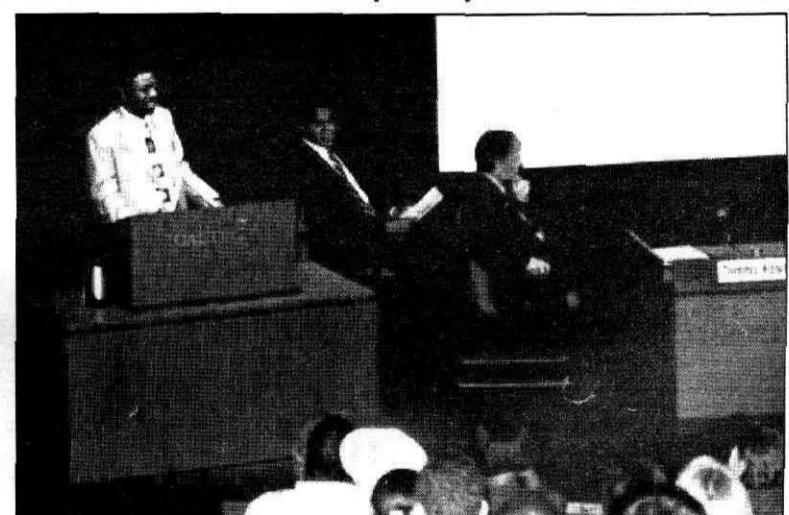
Kousser, a professor in the division of Humanities and Social Sciences, provided a background on the evolution of racism in America. He began by describing the changing racial distribution of California's population. An expert in the legal and political realm of race relations, Kousser also described the evolution of race-re-

lated legislation since the Civil War.

Next to speak was Dr. Michael Scott, an African-American urologist who was born in the West Indies. Scott described both personal contact with racial biases through his medical studies and the ongoing history of racial violence against African-Americans. He also expressed a desire to see "Institutes for Race Relations" established at colleges and universities to discuss strategies for racial reconciliation.

Leonora Barron, who currently directs a community-based social organization, had a more personal perspective on race. She grew up in east Los Angeles. Her early childhood was marked by several incidents of violence, including the discovery of a dead body at age five, and a series of riots. She expressed hope for combating racism in the future, particularly on the community level. "We need to make choices that embrace everyone else," she observed.

Attorney Diann Kim had a very unique perspective. Her family was the only group of Asians in a small Indiana town where most people were classified by their flavor of Christianity, rather than color of skin. She



The Caltech community receives a presentation from Dr. Michael Scott about racism against black Americans

talked extensively about problems caused in the Asian community by the "Model Minority" myth. According to Kim, this myth stereotypes Asians as smarter, harder working, and making more positive contributions to society than other minorities. She said that this myth has had diverse repercussions

within the Asian community, such as making it difficult for low-income families to obtain state and federal aid.

The end of the session was devoted to questions and answers from the audience. When asked what Caltech was doing to encourage minority students,

PLEASE SEE MLK ON PAGE 4

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Culture Watch

by Cheryl Forest

Student Chamber Music Concert

Sunday, January 24, 3:30 p.m.
Dabney Hall

Robert Schumann's (1810-1856) Quartet for Piano and Strings, Op. 47. Players include David Fang, violin; Kacie Shelton, viola; Dan Giammar, cello; and Cheryl Forest, piano. The combination of violin, viola, cello, and piano, was first used by Mozart, and inspired some of the

greatest chamber music of the Romantic era. Schumann wrote this quartet in just two weeks in October of 1842. Felix Mendelssohn (1809-1847) wrote two trios for violin, cello, and piano, and Sunday's concert will include the C minor trio, Op. 66, the less frequently heard of the trios. Performers will be Nick Knouf, violin; Kay Jhun, cello; and Dan Rogstad, piano. Mendelssohn composed this trio in 1846. This tremendous outpouring of excitement in the first movement is followed by a peaceful song-like second movement, then one of Mendelssohn's typically masterful Scherzi, and finally a last movement marked "Fast with

passion" which juxtaposes furious rapid passages with a stately Lutheran chorale. The program will also include Debussy's Petite Suite for piano duet played by Giao Hang and Ah-San Wong. Free (no tickets required.) Refreshments will follow the performance.

Alive with Music!

Wednesday, January 27
Dabney Hall

Prof. Rick Wilson and Fred Kasper: duets on pre-modern flutes. These free, informal, serious-but-not-so-solemn sessions of music and talk are held every Wednesday in Dabney Hall. All are welcome. Caltech students

are specially invited. Arrive late or leave early as your schedule dictates.

Student Concert

Thursday, January 28, noon
Dabney Hall.

This concert will feature a string trio, cello quartet, clarinet quintet, two piano duets, and the ever-popular free lunch for the first 100 people.

Caltech Jazz Band Concert featuring Wayne Bergeron

Saturday, January 23, 8:00 p.m.
Beckman Auditorium.

William Bing will direct the two jazz bands in this weekend's concert. Some of the musical

selections to be performed include "Zoot Suit Riot", "Jump, Jive, and Wail", and "St. Louis Blues". The guest soloist, Wayne Bergeron, began his professional trumpet career at the age of 19. In 1986 Wayne joined the Maynard Ferguson Band. His Television credits range from *Pinky & the Brain* to the *Emmy Awards* and the *Jeopardy* theme. Mr. Bergeron has recorded with many artists to include Chicago, Celine Dion, Vince Gill, Billy Joel, Brian Setzer Orchestra, Green Day and Julio Iglesias. For further information about this free concert: please call the Caltech Ticket Office at (626) 395-4652.

CORRECTION

In the upper left-hand box on last week's paper, the sentence which read "Canada had higher functional literacy rates in adults ages 16-65 than the United States, with roughly 58%, 56%, and 56% able to cope, whereas the US was at 54%, 50%, and 52% functional literacy..." should have read "Canada had higher functional literacy rates in adults ages 16-65 in the categories of prose, document, and quantitative literacy than the US, with roughly 58%, 56%, and 56% able to cope..."

THE CALIFORNIA TECH

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FREE CONCERT!!

FREE?

Caltech Jazz Bands

directed by William Bing

January 23, 1999

Saturday, 8:00 pm

Beckman Auditorium, Caltech

For further information, please call (626) 395-4652

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Wayne has performed with Frank Sinatra, Tony Bennett, and Maynard Ferguson

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Keith Peters



tinue in my service of the noble ideal which is the Honor Code in a stronger and more dedicated way. I believe that by becoming the Chairman for the Board of Control I will be able to do this.

Alan Rosenwinkel



(the Deans, Kim West, Jaideep Singh, and myself) use the next year to make sure that it is implemented in an appropriate manner.

3) I

want to continue as BoC

Chair for another year and I'm not going to flame like Maria :-)

In other words: I have learned so much over that last year that I really think I could make a lot of positive changes, some of which have already begun. I will make sure that any changes made by COSGAA are implemented well. I'm not crazy, I really do want to be BoC Chair again.

I realize that it is very difficult for you to know if I have been doing a good job because it's all secret. If you want to know such a thing, you should talk to your house BoC rep, Kevin Bradley (the BoC Secretary), or the Dean. They will all have some insight into how good a job I do, but Kevin really is the only one who knows everything because he and I do preliminary investigations. On the other hand he is one of my best friends so he might not tell you the truth ... wait ... he's the BoC Secretary ... I think if you ask him whether I suck, he will tell you his honest opinion.

Anyway, I think that's about all I have to say. If you have any questions, feel free to e-mail me (alanr@cco), call me (x1405), or stop by my room (Lloyd 210).

Thanks for listening,
Alan Rosenwinkel
Chairman, Board of Control

ASCIT PRESIDENT

Baldeep Sadhali

I must admit that my competition is the better politician. No is smarter, sexier,

and more likely to curry rumours of scandal. No can lie better than I can, and No looks good kissing babies. But there is one thing that I do better than No: I can drive a car. No will never be able to get your Friday morning donuts.

Vote for Baldeep. He's pro-donut.

PROPOSED BYLAW CHANGE

Make the ARC Secretary an Appointed Office

ARTICLE IV—OFFICERS

SECTION 1. The general officers of the Corporation shall be the President, Vice President, Secretary, Treasurer, Interhouse Committee Chairman, Director for Academic Affairs, Director for Social

Activities, and two Directors at Large. These offices, and those of Board of Control Secretary, and Editor of the California Tech and Secretary of the Academics and Research Committee, are elected offices.



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MARS...

CONTINUED FROM PAGE 1

year-old Caltech sophomore Chris Hirata. "But impractical engineering killed the plan." July 20th, 1999 will mark the 30th anniversary of the Apollo XI landing. "As the 30th anniversary approaches," continued Hirata, "Our goal is to have a plan worthy of a new national effort-and the dream of humans-

to-Mars itself."

Caltech/JPL Mars Society chapter president Derek Shannon thinks so, too. "The public has opened up its imagination to the possibilities with every step, from the Allan Hills meteorite to the wildly successful Pathfinder mission. All that's needed is a plan that everyone can agree on for a unified push to put people on Mars." However, Shannon is careful to reserve

credit for the plan-and man-that has already rallied support for humans-to-Mars all over the world. "Dr. Zubrin's Mars Direct is what has gotten us this close, and it's still at the heart of almost every plan out there, including ours."

Dr. Zubrin will present his talk, "The Case for Mars," at 4:30 p.m. this Saturday in Baxter Lecture Hall. Admission is free.

Tennis Coach, Team Look Forward To Good Season

BY GERALD PALMROSE

The Men's Tennis Team is one of the most successful sports teams that Caltech fields. Much of this is due to their outstanding coach, Wade Gillam, who now enters his third year here at Caltech. I had a chance to talk with Wade, and here's what

Caltech

seems poised to make a little noise this year.

Wade has been a teaching pro for twenty-two years now, dating back to his college days at UC Berkeley, where he was a member of their intercollegiate tennis team. Two years ago in Wade's first year, Caltech finished 6th in the conference. Last year, they finished 5th, and are looking to do even better this year.

Wade bases his practices on a good work ethic and spirit, while always stressing the fundamentals. Caltech has won the team sportsmanship award both years since its inception in 1997, which Wade is very proud of. Speaking of coaching Caltech athletes, Wade says, "I enjoy it a lot."

Wade is complemented this year by professional tennis player Lee Shields, who used to be Boris Becker's doubles partner. With Lee's match experience and savvy, the team

figures to benefit greatly from his presence. Not only that, they might have a chance to take swings at Lee's 125 mph serve!

This year's team is perhaps the strongest in recent memory, even with the loss of #1 Ronak Bhatt and #2 Jason Jenkins to graduation. With seven returning players and the best incoming class he's ever seen, Caltech seems poised to make a little noise this year. They are led by Senior Captain Jeff Custer and top returners Matt Musick and Eric Sherer. Musick, of course, plays basketball, and he will join the team in February.

The thing that most impressed Wade last year was the focus and competitiveness of the team. Better known for academics, almost every Caltech athlete starts a little behind his peers at Oxy or Whittier because of the nature of Caltech. However, by carefully balancing the needs of his players for both athletic intensity and academic necessities, Wade seems to have instilled a winning attitude into the team that runs from the top player all the way to the least experienced.

The importance of good coaching is often overlooked, but one must only turn to football and Bill Parcells to see what one man can do. There is no doubt that come match time, the tennis team will be ready.

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The Outside World

by Cheryl Forest

WASHINGTON, D.C. — President Clinton delivered his annual **State of the Union address** last Wednesday. In his 77-minute speech, the President made a large number of proposals ranging from Social Security reform and a patients' bill of rights to Census reform and a war against what he has termed "the tobacco lobby." No mention was made of the impeachment proceedings.

BOGOTA, COLOMBIA — Peace talks that had been in progress since January 7, 1999, were suspended early this week as the **FARC (rebel) representatives accused the government of backing right-wing extremist death squads** that recently murdered 140 people across the nation. According to CNN, more than 35,000 people have died in the last

decade as a result of the war in which right wing paramilitaries have sided with the government against leftist guerrillas.

VATICAN CITY — The Pope will leave for Mexico City on Friday and will stay there until Tuesday, when he will fly to St. Louis, Missouri for a 30-hour stay. He will be **meeting with President Clinton** in St. Louis and is expected to touch on such topics as the death penalty, abortion, and the U.S. stance towards Iraq.

SOMEWHERE IN THE MILKY WAY — The International Astronomical Union is considering **revoking Pluto's planetary status**. A decision about the matter may be made within months.

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FOR WITH FOOD

BY DAVE TYTELL

for Omlette day in the North Houses next week!

Ever wondered where your board fees go? Every dollar you spend on food at Caltech is divided up as follows:

35¢ Food

40¢ Labor

17¢ Overhead (Caltech Security, Landscaping, Payroll, Water and Electric service, etc.)

8¢ Internal CABS

Furthermore, Caltech Dining Services subsidizes the Coffeehouse, as well as Avery House. All this explains why the food committee rarely grants refunds to students. Regardless of whether food was eaten, 65¢ on the dollar still went into the overhead to produce the meal.

On a lighter note, I am pleased to announce that the specialty bars are back. Look

Where do your board fees go?

speak once more about Caltech's revolutionary kosher/halal board plan. CDS is pleased to accommodate observant Muslim Students & staff with halal meals available daily. Our kosher & halal kitchen has been inspected by Dr. Muhammad Abdelbasset of the Islamic Center of Los Angeles. He approved Caltech Dining Services' strict process of food selection and preparation as fit for observers of traditional halal practice. Furthermore, the kosher program continues to be monitored by and follows the strict requirements of the Rabbinical Council of California.

Don't bother to catch Virus in the theater

BY JUSTIN HO

It was an eclectic cinematic weekend, witnessing the release of 3 major movies: psycho horror-drama *In Dreams*, teen angst-ridden and MTV-pumped *Varsity Blues*, and the sci-fi blunder *Virus*. *In Dreams* is, according to other reviews, a deliciously fear-inspiring movie and probably the best of the openers. Annette Benning is the victim of a psychotic murderer's telepathic prowess, envisioning his pre-meditated slayings. In her dreams she's haunted with eerie pictures of apples (alluding to the fall from innocence in the Garden of Eden) and haunted houses. *Varsity Blues* was also an unexpectedly decent film, though I would prefer van Der Beek's pop-trivia savvy, movie-loving Dawson over some pumped-up football star with a sidekick named Billy Bob. Don't look for the same

Waterboy qualities, though, because this movie tries to explore more dramatic teen issues, like expectations, getting into a university with no core curriculum (Brown),

drinking, running a w a y f r o m cops, and cleavage. Mox (Van Der Beek) serves as the replacement quarterback for the last 5 games after the first one bows out

because of injury, and he naturally becomes the hope of the town. I'm being sarcastic, but the movie is supposed to be quite decent, and it has to be better than *Virus*.

Virus (rated R for gross anatomy and other wannabe horror-pic stuff + all them robot things,  two cow pies)

First, there's a shot of a Russian research vessel, in com-link with MIR so that the head scientist can play chess with someone in an atmosphere away. And then comes some electromagnetic propagation which makes the connections on MIR go bonkers, and then a weird signal to the Russian vessel is sent. Explosions and electrocutions later, lots of people on board become unconscious.

A week later, in a Gilligan-esque scenario, a small tugboat gets tossed around in stormy seas under onslaught by a hurricane. They enter the eye of the storm to make repairs, but realizing that the ship is taking in water, they find a behemoth ghost vessel to board. Finding the ship deserted (or so they think), some of the members foresee the fortune they would make scavenging its parts, ignoring the puddles of blood hiding here and there, and the bunches of maliciously severed wires portending... the minced human bodies to come later.... Well, not really, but the sabo-

...it's hard to find anything heroic about Foster, the voice of rationality, played by ex teen scream queen Jamie Lee Curtis.

taged ship does look kind of creepy. The captain of the boat is irrational, and ignores the threat of malicious little robots who suddenly pop up out of nowhere and start slicing the tug-boat refugees, one by one. So it's hard to find anything heroic about Foster, the voice of rationality, played by ex teen scream queen Jamie Lee Curtis.

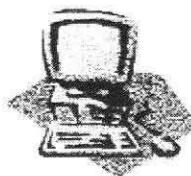
The creation of electrical engineering nightmares is some creature/extraterrestrial entity (which also attacked MIR) which construes humans as some kind of exterminable virus. Lurking inside the computer mainframe of the ship, it builds itself a malicious army of androids. It also steals information to learn how to kill us. Ach, I'm a virus, and I deserve to die... hmmm, how ironic that in a biological sense, viruses technically aren't living to begin with.

The title is absolutely misleading. It could have been yet another installment of *I Saw What You Can Do Last Summer* (being that the alien knows the insidious behavior of the human race) or *Robotastic Park* (people running away from robots gone amok amok amok amok...).

The alien knows the insidious behavior of the human race) or *Robotastic Park* (people running away from robots gone amok amok amok amok...). The special effects are few and far between, and the acting is nonexistent. It tries to establish the gravity of the whole situation, but all that is created is a sense of the film's stupidity. Bits of attempted humor are futile, as it is only a poor knock-off of the *Alien* series of *Event horizon*. Too much time is wasted establishing the situation at hand, and the ultimate test of sentimentality, when a character commits suicide in some explosive way as to bring down a foe, creates only a bad taste of apathy. While self-sacrifice in *Aliens* and *Event Horizon* is evidently copied, the aftermath of one character's demise strikes a chord of "Oh, the Russian lady who spoke English phenomenally well without an accent just blew herself up" rather than some poignant sense of the character's heroism. The characters you expect to survive straight from the beginning do exactly that, so there's no surprise ending, either... which begs the question of what the movie *does* have... which is an overwhelming thumbs down.

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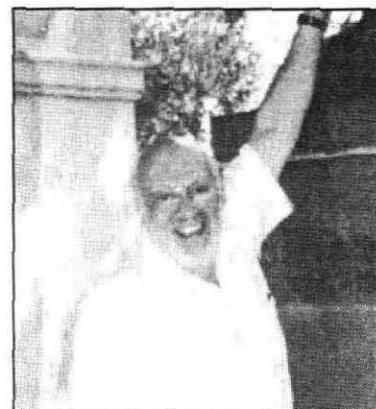
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Dean's Corner

What TASCs we undertake!

by Jean-Paul Revel

herself, while her husband was otherwise occupied, engaged in esoteric pursuits like "all nighters" spent observing an oil droplet suspended between condenser plates, which led him to determine the charge of a single electron.

She was once asked about Millikan's absence. Oh! said Mrs. Millikan, he is watching an ion! That was promptly relayed down the mouth to ear telephone as "he is washing and ironing." Can you imagine that, my dear!

From Prof. David Goodstein we heard stories about Feynman and his last prediction, that Scandium would be one of the elements in high temperature superconducting materials. But his ability to see in the future must have decreased with his own decreasing life expectancy. Scandium never achieved its promise, and Prof. David Goodstein was led to create "The American Scandium Society" to boost the status of this useless element. Unfortunately, it was difficult to find an appropriate acronym.

Why was there a roaring laugh? Of course, of the acronyms that are fit to print, TASS is already in use by a news agency,

Well, last Monday was indeed an incredibly rich day.

It started at 8 am with an "Administrator's Forum", a presentation about aspects of Caltech culture by our Historian and Archivist Judy Goodstein and her husband, Professor of Physics and Vice Provost, David.

Like their "Liquid Air" Watson lecture, it was a Tour de Force, emphasizing two of Caltech's most well known "origins", President Millikan and Richard Feynman. The presentation was humorous but conveyed the subtle and not so subtle ways in which these two contributed to what Tech is now.

It is a pity that students were not invited. But then at 8 a.m. there would only have been a handful of listeners from that particular group. Actually even Dr. Judith Goodstein averred that it was not her favorite time of day to deliver a lecture.

One of the stories she told us about was of Mrs. Millikan, a very prim and distinguished lady. She was shown in a big, ribbed hat serving tea. Apparently she often had to go to social functions by

yes that is a problem. May I suggest that the task set to his audience by Prof. Goodstein can be resolved, if in a fractured way, as shown in the title of this column.

In the early afternoon I went over to Baxter Hall for the symposium in honor of Martin Luther King, Jr.'s day. That event was chaired by Tommy Hawkins, Vice President for Communications for the L.A. Dodgers, who was introduced by President Baltimore.

Hawkins did a marvelous job, as he had last year as the main speaker. The participants were Professor of History and Social Science Morgan Kousser, Surgeon Dr. Michael Scott, Attorney Diane Kim, and Social Activist Leonora Barrn. Except for Professor Kousser, who gave a magisterial exposé, the panelist presented very personal views of "diversity".

All discussed their own experiences and perceptions of plurality, and how their different circumstances affected their lives. Somehow there was a warm and reassuring feel to their presentations, a sense of good will auguring well for interactions between the many ethnic in our country. There is much to be done, but there is also hope that Martin Luther King's vision from "the top of the mountain" will become reality.

The last mind stretching event of the day was a lecture given by Dr. Hugh Ross, who has a Ph.D. in astrophysics from the University of Toronto, and was a postdoctoral scholar at Caltech.

The billboard suggested that Dr Ross had found ways of linking his religious beliefs to scientific understanding of the Universe.

His scientific credentials made this a tantalizing suggestion, and perhaps he has, but he did not convince this listener that his presentation was anything but an act of faith.

The crux of the argument as I understood it, was that new discoveries of science support the biblical account of Genesis. Never mind that the scriptures contain several different versions of creation. A universe starting with a Big Bang certainly begs the question of what was there before.

Placing God there is fine if that's what one wants to postulate. But such a postulate is not falsifiable at this point, and so it is an act of Faith, falling outside the scope of science. Ross claims but provides no evidence that the creator was in fact the Christian God. Other people might well assert that it was another deity or that there was none at all.

As I see it, if one wants to believe, fine, but let's then not pretend that the scientific approach has been followed. Scientific explanations must be of the kind that can be proved or disproved.

The extent to which everything has to be fine tuned for life to exist, or at least seems to be fine

tuned, does not prompt me to believe that there was a design and therefore a designer. It is just as valid to postulate adaptation through evolutionary mechanisms. Whatever was not "in tune" did not survive.

As Darwin put it, it is the survival of the fittest. Life on Earth does exist under an amazing range of conditions, thriving in the hot pools of Yellowstone and other volcanic areas, on the ice of glaciers, in the depth of the sea, where they are fed by the effluvia of black smokers, and in the colorful brine pools of San Francisco Bay.

The organisms involved differ in subtle and not so subtle ways, but it is clear that generally similar organisms have the capability of functioning in rather diverse environments, from which we could guess that life may exist elsewhere in the Universe. Or, then again, maybe not.

No calculations about how remote the possibilities, especially when based on approximations and the incomplete data available, can ever prove that life (or anything else) can or cannot exist.

I am told that the session generated so much interest that it lasted till midnight! What a day, what a day!

A bientôt,

Jean Paul Revel

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Fleming House and the rest of the Techers would like to give special thanks to the Tenfold corporation for sponsoring last term's Deep Blue Disco. If you enjoyed the dance, let those Tenfold kids

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Deep Blue Disco: Fleming's third term all-campus, underwater disco last year. One of Caltech's best damn parties since I've been here!

know. Representatives come to campus November 23. Stop by and say hello. Here's to a long tradition of fun undergrad events sponsored by the big boys in corporate America.

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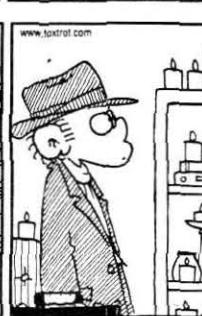
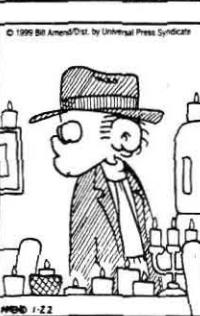
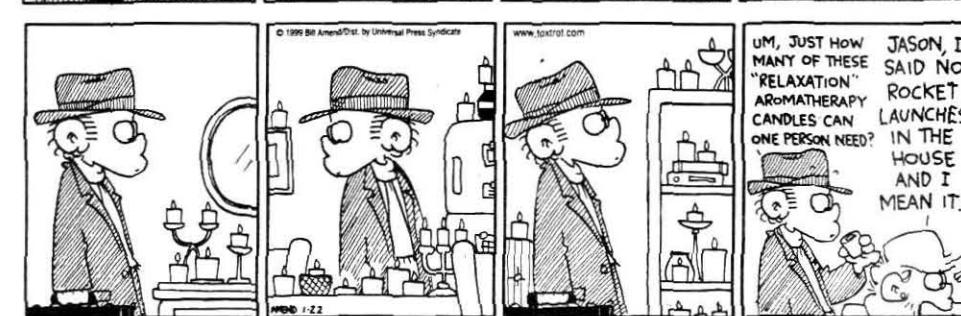
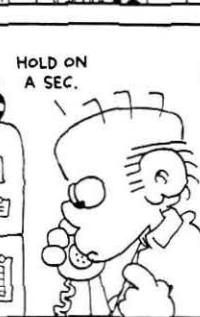
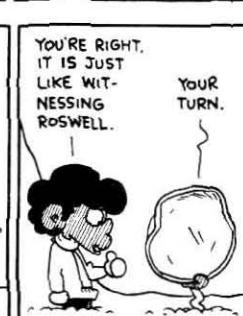
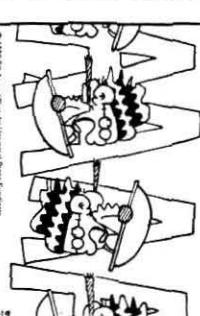
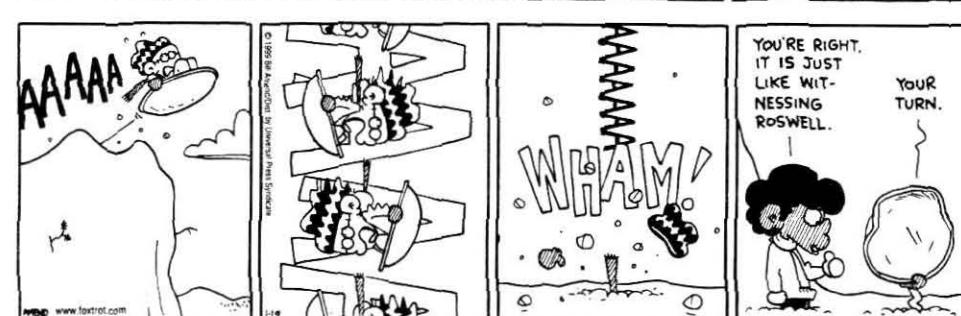
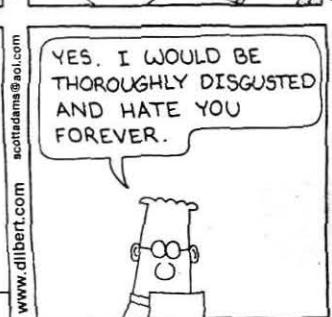
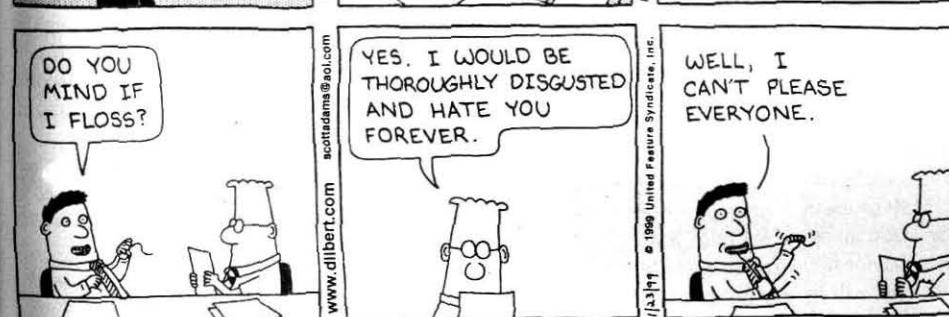
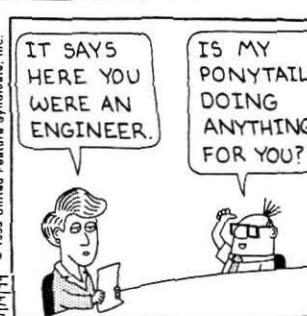
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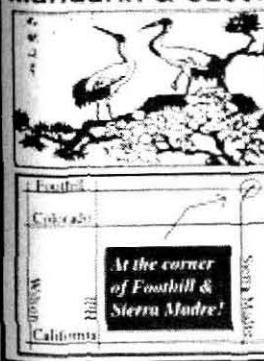
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Announcements

****Looking for summer work** in one of the nation's last examples of pristine wilderness? **Glacier National Park**, located in the northwest corner of Montana, is looking for students to fill more than 900 summer jobs in all segments of the hotel and hospitality areas. Positions range from hotel front desk clerks to tour guides to guest entertainment roles. For details on jobs and salaries call Glacier Park, Inc. at 602-207-2620, write to them at 1850 North Central, Phoenix, AZ, 85077-0924, or visit www.gpihr.com.

Winter course announcement: The H&SS Division is offering **Art12** - A survey of English Art with an emphasis on the fine examples in the Huntington Art Collections. The lectures will be taught by Shelley Bennet and supplemented by field trips to the Huntington. The class will meet TTH 9:30-11 in 125 Baxter.

Attention Caltech Clubs: The **Caltech Student Investment Fund** is now accepting applications for club funding. If your club would like to apply for money, you can download an application from: <http://www.its.caltech.edu/~sif/disbursements>. Funds are limited and the deadline for applications is January 30. If you have any questions, please e-mail sif@its.caltech.edu.

Events

Join Caltech's **Chamber Music group on Sunday, January 31 at 3:30 pm in Dabney Lounge for **Superbowl Alternative Concert V**. Music by Telemann, Beethoven, Arnold, Williams, and Schickele will be offered for those who prefer chamber music to football.

Caltech SEDS will be holding its second **telescope construction meeting beginning Sunday, January 31 at 2:30 pm in the SEDS lab (0011 Thomas). No prior experience is necessary. For detailed construction plans follow the Construction Instructions link from <http://www.cco.caltech.edu/~sed/s/telescope.html>. For other information contact Loren Hoffman at loren@cco.caltech.edu or Leon Torres at leon@ugcs.caltech.edu.

****Kol Simcha** will perform **Klezmer Music** on Saturday, January 30, at 8:00 pm in Caltech's Beckman Auditorium. The Jewish folk music vernacular of klezmer is best known for its wildly exuberant dances, but the genre also has a quiet, deeply emotional side equivalent to the melancholy of Celtic music. Here the eastern European Jewish musicians who invented klezmer could express some of the pain, heartache, and anguish of ghetto life. Tickets to Kol Simcha are priced at \$25.00, \$21.00, and \$17.00. Student and senior rush tickets will go on sale for \$10.00 beginning one-half hour before the concert. Tickets can be purchased at the Caltech Ticket Office or through Ticketmaster. For more information call 1-888-2CALTECH or 626-395-4652.

Hailing from the People's Republic of China, **The Peking Acrobats, an elite group of gymnasts, jugglers, cyclists, and tumblers will leave audiences spellbound with the graceful athleticism of their Asian folk art and acrobatics at the Alex Theatre, Thursday, February 4, 1999 at 8:00 pm. Tickets, priced at \$35.00, \$25.00, and \$15.00, are on sale now at the box office and, through Telecharge, 24 hours a day by calling 1-800-

233-3123. A 15% discount is offered for seniors, students, and Glendale residents with ID at the Alex Box Office only. The Alex is located at 216 N. Brand Blvd. in Glendale and can be reached by e-mailing AlexBoxOff@aol.com.

The Caltech Y will sponsor a **day hike from Millard Canyon to Dawn Mine on Saturday, January 23 in honor of Wellness Week. The 5-mile trail ascends Millard Canyon, generally considered a scenic route, up to the abandoned Dawn Mine tunnel. Elevation gain is 1200'. Participants should meet in front of Steele House at 9:30 am.

Join the **Caltech Jazz and Swing Bands** in Beckman Auditorium at 8:00 pm on Saturday, January 23 for their **annual winter concert**. With guest soloist Wayne Bergeron, who has played trumpet for many leading jazz and pop artists, including Frank Sinatra, Billy Joel, and Neil Diamond, the Caltech Jazz Bands will once again play their great blend of music: something old and something new and everything in between. The Caltech Jazz Bands will be playing at Disneyland in February, and they'll preview some of the Disneyland music at this free concert.

Dabney Lounge will hold the term's first **chamber music concert** at 3:30 pm on Sunday, January 24. The program will include music for strings and piano by Mendelssohn and Schumann, and a piano duet by Mozart.

The **Armchair Adventures** travel film "Adventures Along the U.S.-Canadian Border," narrated by John Holar, will be shown in Beckman Auditorium at 8:00 pm on Friday, January 22. Admission costs \$9.00-\$7.00. For more information call 1-888-2CALTECH or 626-395-4652.

Join Jorge Mester and the **Pasadena Symphony** on Saturday, January 30 for the inaugural concert of the Explorer series **All Mozart**. Featuring Mozart's astonishingly beautiful Requiem Mass, this concert offers the perfect music to start a three-concert examination of one of music's towering geniuses. Tickets are available for \$7.50 with a student ID or for \$6.00 at the Caltech Y. For more information call the Civic Auditorium box office at 626-395-7132.

Fellowships and Scholarships

The **Smithsonian Astrophysical Observatory (SAO) anticipates offering ten internships this summer for talented undergraduates interested in pursuing a career in the physical sciences. Participants in the SAO Summer Intern Program will have the opportunity to actively participate in an individual research project, supervised by a scientist at the Harvard-Smithsonian Center for Astrophysics.

The **National Institutes of Health (NIH) Undergraduate Scholarship Program offers scholarship awards to undergraduate students from disadvantaged backgrounds that are committed to careers in biomedical research. In return, recipients are obligated to serve as paid employees in NIH research laboratories during the summer and after graduation. The scholarships pay for tuition and reasonable educational and living expenses up to \$20,000 per academic year. Applicants must be full-time for the 1999-00 academic year, have a 3.5 or higher GPA or be ranked within the top 5% of your class, and classified as having exceptional financial need.

Mints

Applications are available in the Financial Aid Office. To apply, applicants must submit application form; official transcript; undergraduate institution certification form, and three letters of recommendation, preferably from professors familiar with the student's academic qualities. For more information, visit the NIH website at <http://ugsp.info.nih.gov>. The deadline for receipt of completed applications is March 31, 1999.

The Deans' Office is accepting proposals for the **Monticello Foundation** and the **Robert and Delpha Noland Summer Internships**. Three to five Caltech undergraduate women (current freshmen, sophomores and juniors) will be given an opportunity to participate in research projects outside the Caltech-JPL community for ten weeks during the summer. Each student will receive a \$4,000 stipend. Applicants are required to identify the projects in which they wish to participate for a ten-week period. All arrangements with the principal researcher will be the responsibility of the student. Each applicant must describe her project in a short essay and submit it to the Deans' Office, 102 Parsons-Gates, along with two faculty recommendations. Proposals are due Monday, March 1, 1999.

The **John Gyles Education Fund** is offering scholarship awards up to \$3,000 for the 1999-2000 academic year. Applicants must be Canadian or U.S. Citizens, have a 2.7 or higher GPA, and demonstrate financial need. Criteria other than strictly academic ability and financial need are considered in the selection process. To obtain an application, send a self-addressed, stamped envelope to: The John Gyles Education Fund, Attention: The Secretary, P.O. Box 4808, 712 Riverside Drive, Fredericton, New Brunswick, Canada E3B 5G4. Filing dates for mailing documents in 1999 are April 1, June 1, and November 15.

The **Fulbright Program** has started a special program for graduating seniors who are U.S. citizens and have a knowledge of **Mandarin Chinese**. Students will be able to study in China for 10 months beginning in late August of 1999. Students will need to go through the regular Fulbright application process and be endorsed by the Caltech Fulbright Advisor, Lauren Stolper. Applications are available through the Fellowship Advising Office. Call ext. 3150 or email lstolper@caltech.edu to request an application. The campus deadline for submitting completed applications will be Friday, Feb. 19. Applications and all reference materials should be sent to Lauren Stolper, 25-58.

The **American Chemical Society Scholars Program** will award approximately 75 scholarship awards to undergraduate students interested in four-year degrees in the chemical sciences. Applicants must be African American, Hispanic American, and Native American; and be U.S. citizens or permanent residents. These scholarships are valued at up \$2,500 for the academic year. Applications are available in the Financial Aid Office. The deadline is February 15, 1999.

The **American Chemical Society/PPG**

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Scholarships Plus scholarships are for incoming freshmen interested in four-year degrees in the chemistry or chemical engineering. Scholarships are renewable if initial eligibility criteria are maintained throughout undergraduate study. Applicants must be African American, Hispanic American, and Native American, and be U.S. citizen or permanent residents. These scholarships are valued at up to \$2,500 for each academic year. Applications are available in the Financial Aid Office. The deadline is February 15, 1999.

The **Korean American Scholarship Foundation** is accepting applications for scholarship awards ranging from \$1,000 to \$3,000. Applicants must be full-time students of Korean American heritage enrolled in at least their second year of undergraduate or graduate school in the West Region. To apply, applicants must submit application form; a current academic transcript; two letters of recommendation; one picture of applicant taken within the last year; and a copy of the student's and parents' 1998 Federal Income Tax returns. Students can obtain additional information on the Foundation and download an application form from www.kasf.org or by writing to: Scholarship Committee, KASF Western Region, P.O. Box 486, Pacific Palisades, CA 90272. The deadline is January 31, 1999.

The **Chemical Society/Bayer Scholars awards** are for incoming freshmen, sophomore, and junior students majoring in chemistry or biochemistry. Scholarships are renewable if initial eligibility criteria are maintained throughout undergraduate study. Applicants must be African American, Hispanic American, and Native American; and be U.S. citizen or permanent residents. These scholarships are valued at up \$2,500 for each academic year. Applications are available in the Financial Aid Office. The deadline is February 15, 1999.

The **American Society of Naval Engineers** is offering scholarship awards of \$2,500 for undergraduate students and \$3,500 for graduate students for the 1998-99 academic year. Applicants must be U.S. Citizens and demonstrate a genuine interest in a career in naval engineering. The scholarship award must be for support of the last year of full-time or co-op undergraduate program or for one year of full-time graduate study leading to a designated degree at an accredited college or university. Applications are available in the Financial Aid Office. The deadline is February 15, 1999.

The **College Women's Club of Pasadena Scholarship Foundation** is accepting applications for scholarship and fellowship awards for the 1999-2000 academic year. Applicants must be female, U.S. Citizens, full-time undergraduate or graduate students, a sophomore or above, and must have a 3.0 or higher G.P.A. To apply, applicants must submit an application form; a one page, typed essay; a current academic transcript; and three letters of recommendations, preferably from professors familiar with the student's aspirations and achievements. Applications are available in the Financial Aid Office. The

deadline is February 8, 1999.

The **Elie Wiesel Foundation for Humanity** sponsors an annual essay contest for full-time undergraduate juniors and seniors in colleges and universities throughout the United States. Essays must be submitted on behalf of a student by a college or university administrator, faculty advisor, or faculty member, and be accompanied by a completed entry form. No more than three (3) essays may be submitted from the same college, university, or campus in any one contest year. To obtain an entry form and further information, send a self-addressed, stamped envelope to: The Elie Wiesel Prize in Ethics, The Elie Wiesel Foundation for Humanity, 450 Lexington Avenue, Suite #1920, New York, NY 10017. No FAX submissions will be accepted. Entries must be postmarked by January 22, 1999, or be delivered to the Foundation office by 5:00 p.m., January 22, 1999. (UFA)

The **American Electroplaters and Surface Finishers Society** (AESF) is offering scholarships to upper-class undergraduate and graduate students for the 1999-2000 academic year who are interested in careers in the electroplating and surface finishing field. Undergraduates must be full-time and majoring in chemistry, chemical engineering, environmental engineering, materials science, materials engineering, metallurgy, or metallurgical engineering. To obtain an application form and further information, send a self-addressed, stamped envelope to: AESF Scholarship Committee, American Electroplaters and Surface Finishers Society, 12644 Research Parkway, Orlando, FL 32826-3298. The deadline is April 15, 1999.

Fellowships Advising and Resources has received information on a number of **summer undergraduate research fellowships**. Students receive a stipend and sometimes travel and room fees are paid. Research opportunities are at a number of universities and research institutes including the Mayo Clinic, the University of Georgia, and Princeton. Stop by our office and check through the summer fellowship files for information on these and other summer fellowship opportunities.

For information on the listed fellowships, assistance with essays, for clarification of questions, contact:

FAR - The Fellowships Advising and Resources Office.

For information, please contact lauren_stolper@starbase1.caltech.edu. To make an appointment, call x2150.

UFA - The Undergraduate Financial Aid Office.

For information, call x6280, or stop by 515 S. Wilson for an appointment.

To submit an event for the **Mints**, contact mints@tech.caltech.edu or Mail Code 040-058 by noon on the Monday prior to its inclusion. Submissions must be brief and concise. Please do not send Mints in difficult formats like binhex or word document. ASCII and rtf are best. The editors reserve the right to edit and abridge all material. Solicitations will be referred to the business manager.