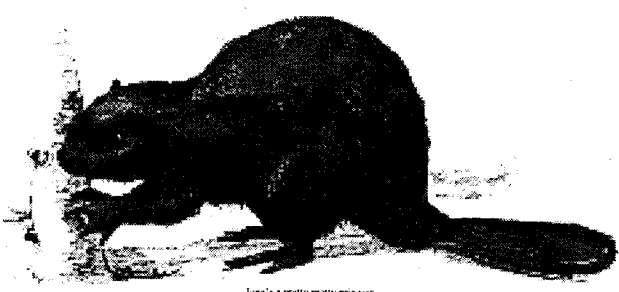
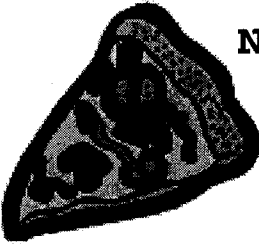


CHECK OUT OUR POLITICAL
COVERAGE ON PAGES 6-7
INCLUDING:
A Tech Exclusive:
Interviews with the Californian Congressional candidates





No Tech meeting
today at
lunch.
Next week our lunch meeting will
be on Thursday (still 12 noon in
SAC 40)

SECURITY
INFORMATION
AND ADVICE

BY IRAM PARVEEN BILAL

The Annual 2000 Security Report says in its mission statement:

“The primary goal of the Caltech Security Department is to provide a stable educational, research and work environment in which security concerns are balanced with freedom of movement and an open campus. Security provides protection of life and property for the Caltech community, which consists of students, employees, faculty, and visitors to the campus.”

Chief of Security Operations, Gregg Henderson, answered a few questions about his security plans.

Tech: What security facilities does Caltech have?

GH: We have 23 full-time, unarmed, uniformed officers patrolling 24-7 all over campus and even on the off-campus properties like the Catalina Housing Apartments.

In fact, for people who do not know, there is a security guard patrolling each of the undergraduate houses daily from 7 p.m. to 4 a.m. So you can always feel safe.

Tech: Can students participate in the security force as a work-study program?

GH: In fact, yes, and there are students - “cadets” - who are restricted to reporting and observing suspicious situations and persons, unlocking doors, providing office support, and especially providing escort service to the Caltech community.

However, the numbers of these cadets varies immensely throughout the year and depends on the time and availability of the students in general. It is indeed a very demanding job.

Tech: What is the most highly-reported crime in Caltech?

GH: (laughs at my apparent ignorance): Of course, bicycle theft!

Tech: How can these thefts be reduced and the event of recovery be increased?

GH: The first answer is U-locks, as most of you know already, but are still determined not to get. For the second goal, I request vehicle owners in general to get their vehicles registered.

LIGO facility achieves first lock

BY TECH STAFF

Officials and scientists from the Laser Interferometry Gravitational-wave Observatory will announce today that they have achieved “first lock”, similar to the “first light” of a new telescope.

For the first time, the LIGO detector at Hanford, Washington, will have simultaneously sent laser light back and forth along both of its one and a quar-

ter mile long arms, thereby achieving the delicate optical interference that will make the detection of gravitational waves possible.

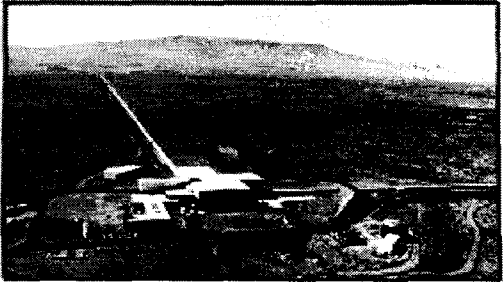
A joint project of Caltech and MIT, LIGO has three national research facilities in the US - two in Hanford and one in Livingston, Louisiana.

They are designed to detect gravitational waves, which are the exceedingly small distortions of space-time caused by accelerating masses, such as ex-

ploding stars or vibrating black holes. Gravitational waves are predicted by Einstein’s theory of general relativity.

Since the waves which LIGO is designed to detect are so small, the arms are set up so that the very slight distortions of space-time in their vicinity will cause perpendicular laser beams to go out of phase.

The two observatory sites must



The Hanford facility in Washington

be located hundreds of miles apart so they can get a direction for cause of the gravitational waves; they also ascertain that

PLEASE SEE LIGO ON PAGE 3

A new view of Mars

BY SERINA DINIEGA

Ideas about Mars have changed almost as often as people have looked up at it and wondered about the small red steady dot in the night sky. Mars represents Ares, the God of War; it is the home base of little green men; it contains messages from aliens (e.g. the Mars “face”); it is a dry and rocky planet, with any water on it long gone or locked in its polar caps. Well, our view of Mars is once again changing, this time due not to overuse of our imagination, but instead to a “revolution of data.”

This was the message shared by Dr. Michael Malin, Principal Investigator of the Mars Orbital Camera [MOC] of the Mars Global Surveyor [MGS] space-

craft and President of Malin Space Science Systems, in his talk Monday, October 16, through the weekly GPS Division Seminar. Describing Mars as a “land of broken paradigms,” Malin discussed three major perspectives that are undergoing changes due to the large amount of data, specifically images, available to the scientific community. According to Malin, “Mars looks nothing like the images from the Viking missions” - the photos from the MOC on MGS tell a completely different story from anything previously thought of.

The first change in perspective Malin discussed was the possible existence of liquid water on Mars. This has been a controversial and widely publicized idea

since photos and analysis were first made public in June of this year. In a small number (about 200 of 65,000 images) of high-resolution (2 to 8m/pixel) photographs of the surface of Mars, gullies are found on the walls of impact craters, south polar pits, and two of the larger martian valleys. As Malin claims in his paper (co-authored by Kenneth Edgett) in the June 30, 2000 volume of Science, these gullies contain “geomorphic features that can be explained by processes associated with groundwater seepage and surface runoff.” This news is not too exciting as people have long associated the extensive “channel” systems on Mars with evidence of liquid water at some point in the distant past. (Ironically, images from MOC suggest that the valley networks are more likely

caused by collapse than by vast floods or erosion due to rivers.) However, the controversy entered with the suggested age of these gullies. Due to the superposition of the gullies over otherwise geologically young surfaces (for instance, dust dunes and tracks from a dust devil) and the absence of impact craters and dust superimposed over the gullies, Malin claims that it is possible for water to still exist on Mars at relatively shallow depths (less than 500 meters beneath the surface). If that liquid water does exist, it could have created these gullies in recent geological history - from a few hundred years ago to last week. This time scale is a far cry from the prior accepted idea of liquid water on Mars only in ancient history, and has high repercussions.

PLEASE SEE MARS ON PAGE 3

Steve Forbes kicks off Distinguished Speaker series

BY ELISABETH ADAMS

The fifth season of the Pasadena Distinguished Speaker series opened Wednesday, Oct. 14, with an address by well-known businessman Steve Forbes. A Republican presidential candidate until he withdrew from the race in February of this year, Forbes is the CEO and President of Forbes, Inc., and the Editor-in-Chief of the financial magazine Forbes, founded by his grandfather in 1917. After remarking that “you make more money selling the advice than following it,” Forbes spoke for over an hour on many of the past century’s political and economic topics.

Although he began by extolling the “fabulous” technology

and possibilities of the United States today, he also admonished that “just because the possibilities are glittering does not mean they’re going to happen” unless we make them happen. He then compared the boom in the 1990s with a similar economic boom in the 1920s, when despite the blossoming of new technologies and industries, a series of bad political moves ushered in the Great Depression. Forbes pointed out that some of these political decisions are similar to ones being made today. (For instance, he recounted how the Federal Reserve had sought to slow down the “over-exuberant” stock-market in the ‘20s, and criticized recent similar moves by Alan Greenspan, chairman of the Federal Reserve.)

Forbes’ almost unbridled en-

thusiasm for entrepreneurship and technology was coupled with the realization that “politics matters.” Although he did not express great love for Microsoft (“They can be impossible to work with—we know, we’ve tried”), he strongly disagreed with the recent Justice Department order to break up the company on the basis of “obsolete anti-trust laws.” As Forbes saw it, Bill Gates had

done “no harm” to the flourishing competition of the high-tech world over the past decade. Forbes was also derisive of economists who approach problems with economic models and the attitude that “it’s the world’s fault, not the theory’s.” Throughout his talk, Forbes repeatedly applied simple (and sometimes simplistic) common sense arguments to disprove

PLEASE SEE FORBES ON PAGE 4

Inside the Tech			
The Usual		Features	
Random Access	2	Yoghurt	2
Outside World	7	Political Statements ..	6-7
Foxtrot	10	Frosh Perspective	4
Dilbert	10	Vanilla	9
The Dean’s Corner	11		

A Review of Peter Grimes

Yaghurt

BY SIEGFRIED AND BRÜNNHILDE

This week we are bringing you an honest-to-God review. We went to the opening night performance of the L.A. Opera's production of Peter Grimes by Benjamin Britten.

It is an opera about alienation and gossip. Peter Grimes' apprentice dies while they are out fishing, after three days without water. Though the coroner rules the death accidental, the people of the Borough believe Grimes is responsible. There are people who stand up for Grimes against the gossip, but they are mocked by the other townsfolk. The most disturbing thing about the entire scene is the huge picture of the boy's head that hovers over the courtroom.

Peter Grimes becomes more

isolated and paranoid, which distances him further from the townsfolk. His only connection is to Ellen Orford, the widowed schoolmistress. After he strikes her in an argument and his new boy apprentice falls off a cliff and dies, Peter Grimes becomes completely insane. He commits suicide by sinking his fishing boat, but the gossips don't seem to care. The manner in which the townspeople interact, however, often gives one the feeling that they are about ready to all riot and kill Grimes.

The really neat part about the entire fishing village is the way in which each character seems to have a bit of flavor. They are not cardboard cutouts. For example, the apothecary is a kind, gentle man who is able to help all the townspeople - and a drug

dealer on the side.

Britten was drawn to complex characters such as Peter Grimes. Grimes is an antihero, a man who abuses children, strikes a woman, and yet remains a sympathetic character. Some have argued that Peter Grimes, like Benjamin Britten,

Enter the Yaghurt contest:

"We're running a contest this term that could get you an evening out with the columnists. We'll be changing pseudonyms each column. Identify each allusion and you'll be entered in a drawing to win dinner and a concert with us for you and a guest." E-mail contest entries to tech@ugcs.caltech.edu

was a troubled homosexual. The director, John Schlesinger, says this it is ambiguous and can be left to individual interpretation.

Britten composed the opera near the end of WWII and that influence can be seen. The

townsfolk follow a banner and drum and march two by two to Grimes' hut in a manner that is very reminiscent of Nazi soldiers.

The sets for this opera are stark, in keeping with the mood, but we both enjoyed the lighting very much. There are come very cool musical moments in the piece. Examples include the female quartet in the middle of Act II, and the Act III ensemble of about 60 people who shout for Peter Grimes in a way that will scare the heck out of patrons. Almost all the ensemble pieces are highly enjoyable. You can spend the rest of the night singing to yourself that "Old Joe has gone fishing." The orchestration, however, is sometimes rather predictable. Listen for the evil B-flat key throughout the opera - it always indicates that something bad is happening, and starts far enough in advance to destroy

all suspense. Furthermore, the opera's theme is at times so blatant that the show is painful to watch. It is not nearly as bad as last season's Billy Bud, whose Christ archetype was obvious to anyone who was not blind and deaf, but Peter Grimes still pounds its theme home rather relentlessly.

Peter Grimes is playing at 1 p.m. on Oct. 21 and Nov. 4 and at 7:30 p.m. on Oct. 24, 27, and 29, and Nov. 1. There is a preconcert lecture one hour before the show and student rush tickets (\$20) also go on sale one hour before the show. Yes, twenty dollars seems like a lot, but half the time when we get them, we are seated in the Founder's Circle. Given that those seats cost \$148, \$20 is quite a bargain.

"Siegfried" and "Brünnhilde" are columnists who write the semi-regular column, Yaghurt.

UNIVERSAL STUDIOS HOLLYWOOD®

HALLOWEEN HORROR NIGHTS

OCT. 13, 14, 20, 21, 27, 28, 29 & 31

FEATURING ALL NEW MAZES



ROB ZOMBIE

SAVE \$10

off admission when you purchase your tickets in advance at the Universal Studios box office, **ticketmaster** outlets (213) 252-TIXS, or at www.halloweenhorrornights.com

Receive \$10 off regular admission price when purchased prior to day of event. Offer expires 10/31/00. Tickets valid for Halloween Horror Nights 2000 event. Tickets not valid at Universal Studios Florida. Discount offer not valid toward purchase of VIP ticket. Ticketmaster prices subject to Ticketmaster convenience and/or handling charges. Tickets available while ticket supplies last. No refunds or exchanges. All prices, attractions, shows and special events subject to change without notice. For general park information call 1-800-UNIVERSAL. There are height requirements for some rides. Event contains graphic depictions of horror. Not recommended for kids under 12. No costumes allowed. ©2000 World Wrestling Federation Entertainment, Inc. All Rights Reserved. TM & ©2000 Fox. ©2000 Universal Studios. All Rights Reserved. 00-ADV-48

THE CALIFORNIA TECH

Caltech 40-58, Pasadena, CA 91125
editorial desk: (626) 395-6153
advertising desk: (626) 395-6154
editorial email: editors@tech.caltech.edu
advertising email: adv@tech.caltech.edu
ISSN 0008-1582

VOLUME CII, NUMBER 5
OCTOBER 20, 2000

EDITORS IN CHIEF

Jonathan Foster
John Oh
Dana Sadava

BUSINESS MANAGER

Tasha Vanesian

ADVERTISING MANAGER

Jennifer Lee

COMICS EDITOR

Kenneth Kuo

PHOTOGRAPHER

Erik Dill

Dana Sadava

COPY EDITORS

Elisabeth Adams

CONTRIBUTORS

Jason Cardema

Vanessa Sih

STAFF WRITERS

Justin Kao

Mohi Kumar

Merc Chasman

Mona Sheikh

Erik Dill

Kenneth Kuo

FEATURE WRITERS

Justin Ho

Stephen Shepard

Jason Meltzner

Adam Villani

MINTS

John Oh

CIRCULATION STAFF

Roger O'Brient

Rick Karnesky

ADVISER

Hall Daily

DEADLINES

Advertising: 5 p.m. Monday
Announcements (Mints): noon Monday
Letters to the Editor: 6 p.m. Tuesday
Unsolicited Articles: noon Monday

Published weekly except during vacation and examination periods by the Associated Students of the California Institute of Technology, Inc. The opinions expressed herein are strictly those of the authors and advertisers.

Letters and announcements are welcome. All contributions should include the author's name and phone number and the intended date of publication. The preferred submission method is to e-mail tech@ugcs.caltech.edu with the body of the article appearing in plain text. Alternatively, you may submit copy (preferably on Macintosh 3.5" disk) to the Tech mailbox outside SAC room 40. The editors reserve the right to edit and abridge all submissions for literacy, expediency, etc. All articles are the property of the authors. Authors and columnists retain all intellectual property rights.

Advertising should be submitted as camera-ready art, but the Tech can also do simple typesetting and arrangement. All advertising inquiries should be directed to the business manager. For email, please use business@tech.caltech.edu. Do not send ad inquiries to the editors.

For subscription information, please send mail to "Subscriptions" or call (626) 395-6154.

Printed by News-Type Service, Glendale.

WE live for the One. We die for the One.

Technology

Random Access...

by: Vikram Dendi

vikram@caltech.edu

So, since this is as random a time as any, I am back with the next issue of Random Access, your guide to everything cool.

What do a sewing machine and a gameboy have in common? "A taste for good stitching" is the Singer company's answer. The Singer Sewing Company has teamed up with Nintendo to create a new sewing machine system using Game Boy technology. The system, called Izek, automatically sews stitch patterns, buttonholes and lettering. It includes a sewing machine, a Game Boy, a connection wire, and a special cartridge that contains stitch pattern designs. Now little kids won't be the only ones stumping for a Game Boy. The system is due to be out by November 2000.

http://www.singershop.com/whats_new.html

Imagine your everyday book, which is printed on normal paper, doesn't have any sensors or transceivers, and can be bought in every bookstore. Now imagine opening this book to three-dimensional illustrations that can be rotated, scaled, moved, and so on. Simply turning the book's pages reveals new virtual images. While staying in physical reality, you can interact with a virtual one, becoming a part

of so-called "Augmented Reality."

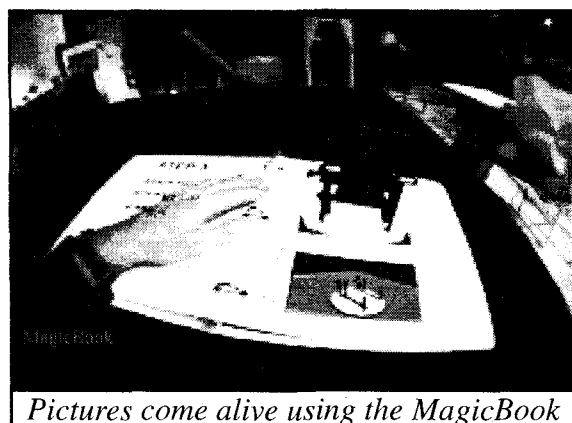
Researchers at the University of Washington are showcasing technology called the MagicBook, which is said to work just like that. This "magic" system currently has two components - the head mounted display (HMD) and the physical book. A small color camera on the HMD is attached to the computer's video-in port. The video-out port is connected into the HMD, so when users look into the HMD they see the real world, experiencing it as a video-mediated reality. The computer is used for image processing of video from the head-mounted camera and for generating the virtual images.

The books used in this system are normal books with text and pictures on each page. With these books, the user can see 3D virtual models overlaid on the real pages, or can experience the virtual scenes immersively. The pictures in the book have a distinct black border around them and act as visual tracking markers. When the user looks at these

pictures, image processing techniques are used to calculate head position and orientation relative to the tracking pattern. The computer then adds a 3D model to the video stream.

If two or more users are looking at the same page, they will all see the same virtual image attached to the real picture. This enables them to manipulate collaboratively the virtual images by picking up the page and looking at it from different angles.

When the users see a virtual scene they wish to explore, they flip a switch on the HMD and are transported into the immersive space. The users can look in any direction to see the virtual world surrounding them, and can move through the scene.



Pictures come alive using the MagicBook

Pressing on the pad in the handle of the HMD makes users fly through the virtual world in the direction in which they're looking. The harder they press, the faster they move. If there are several users in the same virtual world, they will see each other as virtual avatars. A user viewing the virtual scene in "Augmented Reality" mode will also see miniature avatars of everyone immersed in the world. Flipping the switch again transports the users back into the real

world.

As is typical, the technology is very impressive in theory, but hard to realize. Right now, very simple models (for instance, the table in the picture above) are rendered in 263x234 resolution and the performance speed is typically 15-20 fps. The project is in its early stages, and it is expected that this will improve with time.

<http://www.hitl.washington.edu/magicbook/>

The "finger" phone is one of the latest wearable devices to come to my notice. It consists only of a wristband. The band houses a tiny microphone, plus a device that converts audio signals into vibrations. To hear incoming calls, the wearer puts a finger in one ear (my friend was laughing nonstop trying to imagine people using this phone, with fingers in their ears). The caller's voice is converted to vibrations, which travel through the hand, the finger, and into the ear canal. The wearer talks back via the wristband's microphone.

To answer the phone, called "Whisper" because incoming calls cause the wristband to vibrate, the wearer taps the thumb and index finger together. There are no buttons to press, and there is no keypad to control. Voice recognition will be added.

Created by a Japanese Telecom Engineer working for NTTDocomo, this phone apparently works well as a prototype, although Docomo senses reluctance among users to wearable comput-

ers.

I don't know about other people, but I would jump at the opportunity to use such a gadget.

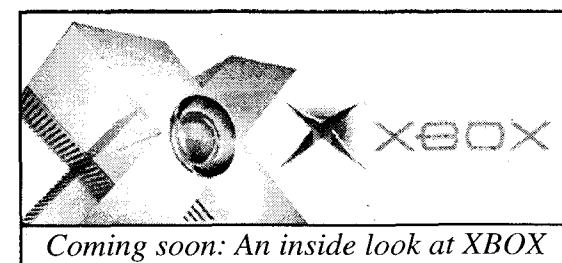
Before I sign off, here is an interesting deal, in the spirit of the cool deals Random Access brings you. Check out "Bigredwire," a service which assures you that you won't need to pay your long-distance phone bill anymore. If you switch to their long distance service, you can "zap" away, earning points for state-to-state long distance calls. You get points for looking at some websites and clicking on some stuff. Pretty simple. Anyhow, it sounds good because there is no contract (if you don't like it, you can cancel immediately) and it uses a normal phone line (it's not routed through the internet). So check it out at <http://www.bigredwire.com/>

A glossary of some of the terms, websites and companies in this article is forthcoming as part of Random Access. In addition, an online resource center will soon be open at

<http://randomaccess.geekguru.com>.

Please direct any questions, comments or other correspondence to randomaccess@geekguru.com

And with that, I will be off to do random things (like homework) and will see you at the next random time.



Coming soon: An inside look at XBOX

MARS:

CONTINUED FROM PAGE 1

sions in the plans for future missions to Mars, especially those involving humans.

However, Malin does admit that as encouraging as the photos are, they are nowhere near conclusive. Many other researchers are looking at alternative explanations. As the primary mission plans of MGS draw to a close, Malin hopes to be able to re-focus MOC on the youngest looking gullies to get more images and do more analysis.

The second change in perspective that Malin discussed had to do with the plains of the Northern Hemisphere. It has long been supposed that these plains are the dry remains of an ancient seabed that encompassed most of the Northern Hemisphere. This idea was supported by the uniform negative altitude of the plains and a visual change in morphology along what would be the shoreline. However, the images from MOC do not find

any of the attendant land forms (e.g. marine terraces) that would conclusively indicate a sea existed there. In actuality, MOC images show that there are more small craters visible on the side of the "shoreline" that would be in the sea than on the side that would be land - the exact opposite of what would be expected if a sea did cover the Northern Hemisphere.

Another surprise to scientists was that Mars is not as rocky as was originally thought. Due to the higher resolution of the images, individual large rocks are visible. These rocks seemed to occur in patches; they are not randomly distributed over the surface as was supposed.

Finally, Malin talked about the phenomenon that seems the most intriguing to him. On Mars, he could find surfaces with "normal" cratering. For instance, he compared one picture of the martian surface with a picture of the lunar surface and the cratering was almost identical.

However, Malin could also find large surfaces without any visual evidence of cratering. By

other evidence, these surfaces are general accepted as older than the surfaces with cratering—a seeming contradiction!

This leaves four possibilities: that craters are for some reason not preserved in that region; that the region can't be hit, so no craters can form; that there is extensive erosion on the surface which quickly removes all evidence of cratering; or that the surface has been exhumed and so was protected from being hit.

The first possibility seems implausible as many other land forms are well preserved in these regions. Less implausible is the second possibility as there is evidence of cratering very close to these topological levels.

For example, the floor of Candor Chasm (a part of the Valles Marineris) shows no evidence of cratering, however the walls of the Chasm contain craters. The possibility of erosion is plausible. However, the lack of channels or deposits seems to point away from this reason for the absence of craters.

The fourth possibility seems to be the most viable, according to

Malin. This idea is supported by the morphology of the Valles Marineris. The walls of this valley network have a layer of material that is absent from the floor. This could explain the lack of cratering as if the valley floor was exhumed from this layer, it would have been protected and thus contain no evidence of cratering.

Although MOC and MGS seem to have given us more questions than answers, this data/image revolution will eventually lead to a deeper and more accurate understanding of the Red Planet. If nothing else, these images of Mars have put us closer to finding the true history of Mars and, as Malin said as he ended his talk, it will be up to future scientists to learn to see the true view of Mars.

For more information on Milan's work with MOC and the images, check out http://www.msss.com/moc_gallery. For his Science paper ("Evidence for Recent Groundwater Seepage and Surface Runoff on Mars"), check out <http://www.scienceonline.org>.

LIGO:

CONTINUED FROM PAGE 1

the signals come from space and not some local phenomenon.

"The challenge is that the predicted motions of the mirrors due to even the strongest gravitational waves are incredibly small—about ten billionths of the diameter of an atom," explains Rainer Weiss, a physics professor at MIT who originally proposed the construction of the instrument. LIGO uses computer-based control systems to hold mirrors at the ends of its two arms, with subatomic precision, while sending a laser beam between the mirrors. This test is the first full test of one of three detectors made.

"As important as this milestone is, there is still a great deal more to do," emphasized Stan Whitcomb, director of commissioning for LIGO. "The detector control systems must be carefully characterized and tuned to achieve maximum sensitivity and reliable operation."

News and views

A Frosh Perspective

by Tom Fletcher

Four weeks later and the honeymoon is over. Catered week-end meals and orientation programs are finished. In their place, midterms and problem sets are starting to accumulate like mold in an alley fridge. At first it was just one or two shooting stars, but now the once-invincible frosh are falling back to earth like a meteor shower. Welcome to Tech, fellow frosh, hopefully you'll hit ground zero gently.

One of the most important things I learned over the summer was how to cope when life becomes impossible. I'm very glad I learned that lesson, it's coming in handy now. In between problem sets and quizzes and midterms and hum papers and sleep and dinner and hygiene and <gasp!> the outside world, it's easy to start losing control, like the juggler who took on one too many knives in the air and is now faced with a swift and sharp end.

On that pointed note, I can't tell you how to turn in all your homework, ace your quizzes, and look like Brad Pitt. I can't tell you how long to study so that you get just enough points on that midterm. But, from my experience, I can tell you what to do when those knives you were juggling start falling

down.

First off, talk to the upperclassmen in your house. Your alley should have plenty of them. Most of them don't bite. And they were all freshmen here once too. They even had Barry Simon, a fate we all managed to dodge. They've all dealt with the shock of feeling they're in completely over their heads. They've all felt pangs of homesickness. The can help you. Most of the advice I've gotten came from upperclassmen all too eager to help us lost frosh find our way. In the event that you're too busy to track down one of these legendary oracles of wisdom, I'll just repeat some nuggets I'm very grateful to have picked up here and there.

"Work hard, play hard." You used to be able to do your math while you were on the phone or watching TV. Well, not anymore. If you have homework to do, do your homework. Don't try and watch the Simpsons at the same time. Does this mean don't do homework with friends? Of course not. That would turn you into a troll that forgets how to speak to other people. One of the facts of life at Tech is that problem sets are social events, so grab that Chem set, find some friends, work together on the problems that al-

low collaboration, and enjoy a laugh or two. Then, when you get to the weekend with all your homework done, you don't have to worry about that nagging guilt in the back of your head. You can go off and have fun.

"Know when to quit." The fate of the world does not hinge on the sailboat problem. While tenacity is an admirable quality, intelligence is a better one. Most Tech students aren't used to giving up, but it's important to know when to put the textbook down and go to bed. A perfect score on tomorrow's problem set is worthless if you spend next week comatose because your immune system was compromised by forty straight hours of homework. This doesn't mean don't do your homework, it means keep everything in perspective. Actually, this is probably a lesson you have to learn on your own, but don't say I didn't warn you.

"Don't take everything so seriously." Aside from one or two of you out there, most people cannot spend all week thinking about numbers and formulae without cracking. You need to make time for yourself to relax. Watch thirty minutes of TV, sketch, dance, sing, anything. Brains do not completely determine success at Tech; your ability to deal with the work, retain your sanity, and stay healthy mentally, emotionally, and physically play a huge role in your success.

There are also a few one-liners that shouldn't need much explanation. "Take off that science shirt. Everyone has one." "Get some exercise, even if it's just running to class." "Call your parents. You may not miss them yet, but you will." And "You don't have time for every social event, pick the ones you'll enjoy." Hopefully, you can understand what I'm trying to convey here, or maybe your curiosity has been piqued enough to actually go ask some upperclassmen for advice. It's worth it.

FORBES:

CONTINUED FROM PAGE 1

prevailing economic and political ideas.

Echoing some of the themes of his aborted presidential campaign, Forbes also spoke out against military cuts, the "taxation through litigation" of the billion dollar tobacco court settlements, and the policies of the IMF in international economic crises around the world. They practice economics, he

said, "like doctors practiced medicine 200 years ago": by bleeding the patient, or by encouraging struggling countries to further hurt themselves by devaluating currency and raising taxes.

Forbes offered five basic economic principles that should be used in countries around the world: rule of law, including strong property and land rights; "honest money," or a stable currency that is a unit of measurement; low taxes; less "bureaucratic interference" in setting up and running new business; and the removal of trade barriers.

RETIREMENT INSURANCE MUTUAL FUNDS TRUST SERVICES TUITION FINANCING

While TIAA-CREF invests for the long term, it's nice to see performance like this.

Check out other account performance on the Web

TIAA-CREF has delivered impressive results like these by combining two disciplined investment strategies.

In our CREF Growth Account, one of many CREF variable annuities, we combine active management with enhanced indexing. With two strategies, we have two ways to seek out performance opportunities—helping to make your investments work twice as hard.

EXPENSE RATIO	
CREF GROWTH ACCOUNT	INDUSTRY AVERAGE
0.32% ¹	2.09% ²

This approach also allows us to adapt our investments to different market conditions, which is especially important during volatile economic times.

CREF GROWTH ACCOUNT³

26.70%	27.87%	26.60%
1 YEAR AS OF 6/30/00	5 YEARS 6/30/00	SINCE INCEPTION 4/29/94

Combine this team approach with our low expenses and you'll see how TIAA-CREF stands apart from the competition. Call and find out how TIAA-CREF can work for you today and tomorrow.



Ensuring the future for those who shape it.™

1.800.842.2776

www.tiaa-cref.org

For more complete information on our securities products, please call 1.800.842.2733, ext. 5509, to request prospectuses. Read them carefully before you invest. 1. TIAA-CREF expenses reflect the waiver of a portion of the Funds' investment management fees, guaranteed until July 1, 2003. 2. Source: Morningstar, Inc. 6/30/00, tracking 939 average large-cap growth annuity funds. 3. Due to current market volatility, our securities products' performance today may be less than shown above. The investment results shown for CREF Growth variable annuity reflect past performance and are not indicative of future rates of return. These returns and the value of the principal you have invested will fluctuate, so the shares you own may be more or less than their original price upon redemption. • TIAA-CREF Individual and Institutional Services, Inc. distributes the CREF and TIAA Real Estate variable annuities. • Teachers Personal Investors Services, Inc. distributes the Personal Annuities variable annuity component, mutual funds and tuition savings agreements. • TIAA and TIAA-CREF Life Insurance Co., New York, NY, issue insurance and annuities. • TIAA-CREF Trust Company, FSB provides trust services. • Investment products are not FDIC insured, may lose value and are not bank guaranteed. © 2000 TIAA-CREF 08/03

Low Student Airfares

Eurailpasses

More Than 100 Departure Cities

Study Abroad

studentuniverse.com
IT'S YOUR WORLD. EXPLORE IT

studentuniverse.com

800.272.9676

Buenos Aires Lima Tokyo Santiago London Dublin Paris Nice Copenhagen Stockholm Oslo Amsterdam Berlin Munich Zürich Istanbul

Rome Venice Florence Vienna Budapest Prague Bangkok Moscow Lisbon Madrid Barcelona Tel Aviv Johannesburg Delhi Hong Kong



unlimited

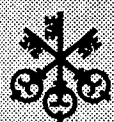
JOIN ONE OF THE FASTEST GROWING INVESTMENT BANKS IN THE WORLD?

Are you looking for a dynamic and rewarding career in investment banking? Do you want to be in a job with a lot of responsibility and opportunity? Do you want to work in an environment where achievement and reward are naturally connected? Then you should consider joining the UBS Warburg team.

We are accepting resumes from the Class of 2001 interested in a full time Investment Banking Analyst position. Interviews will be held on Wednesday, November 1st.

We welcome those interested to apply via your career services office.

www.ubswarburg.com



UBS Warburg

Global careers in
investment banking

UBS Warburg is a financial services group of UBS AG. In the United States, UBS Warburg LLC, a subsidiary of UBS AG, is a member of NYSE and SIPC. UBS Warburg is an Equal Opportunity Employer.

What your candidate will do for you

Rogan and Schiff: candidates' views on science and technology

BY TIM RAUB

Every two years, all 435 seats in the United States House of Representatives are put on the line. Most of those seats are controlled for decades by the same politician or party.

This year, Democrats are poised to challenge and possibly break a wafer-thin Republican majority in the House, and the outcome of that struggle will depend largely on the results of about a dozen races. Several of those contentious House races are in California, and the race

considered closest by many pundits could have profound implications for the Caltech/JPL community.

California's Representative from the 27th District (including Pasadena, South Pasadena, San Marino, La Canada, and Glendale) is Republican Jim Rogan, a former Glendale municipal judge and state Assembly majority leader who was elected to Congress in 1996. Rogan, who sits on the House Judiciary Committee and the Subcommittee on Courts and Intellectual Property, has

garnered media attention both for his successful protection of the Jet Propulsion Laboratory's federal support, which had been cut nearly in half in last year's preliminary budget, and for his outspoken criticism of President Bill Clinton while acting as a House Manager during the Senate impeachment trial.

Rogan's Democratic challenger is State Senator Adam Schiff. Schiff represents the 21st California Senate District (including the same communities as the 27th Congressional District). Like Rogan, Schiff has a

background in law. He chairs the California Senate Judiciary Committee and sits on several other committees.

Schiff has sponsored Democratic bills addressing education standards, HMO reform, and environmental protection for open spaces in the Verdugo mountains. Schiff ran unsuccessfully against Rogan for a seat in California's Assembly in 1994, won election to the State Senate in 1996, and lost to Rogan once more in the 1998 Congressional race, though he received nearly 49% of the popular vote.

Both political parties recognize the volatile nature of the 27th district race.

The candidates have spent more than \$10 million in the

race, making it the most expensive in House history, and Democratic and Republican surrogates have spent even more. Schiff narrowly bested Rogan in California's open primary, but in recent weeks, both campaigns have claimed that internal polling shows its candidate has a narrow lead. Recent debates and advertisements have been hard hitting from both sides.

The California Tech solicited both candidates for their views on several science and technology related issues.

Adam Schiff's campaign responded to each question with the following answers, which have not been edited. Rogan's campaign declined to address specific questions and instead released the statement below.

State Senator Adam Schiff (Democrat) on science and technology:

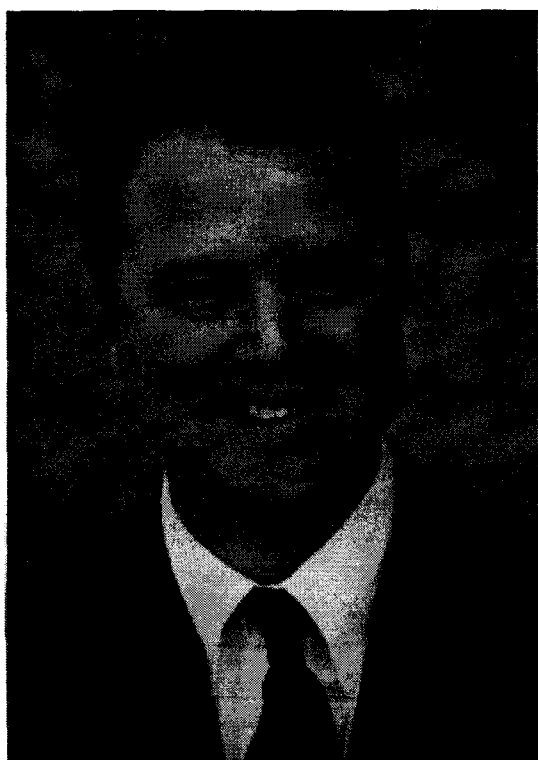
Tech: I want to ask you about your views regarding several science and technology issues. First, do you support a federal ban on funding using human fetal tissue?

Schiff: Research using fetal tissue holds immense potential for the development of new medical treatments, the advancement of current treatments and the prevention of human suffering due to diseases such as Down's Syndrome, Parkinson's, Alzheimer's and diabetes to name a few. For these reasons, I oppose a ban on the federal funding of research using human fetal tissue and believe we should develop appropriate ethical guidelines for such research. The use of fetal tissue for medical research holds such promise due to the cells' rapid division, growth and adaptation. It should be noted that the polio and rubella vaccines were developed with the use of fetal tissue. The amount of suffering that was avoided due to these vaccines alone is immeasurable. The assertion that federally funded fetal tissue research will result in an increased number of abortions is absurd. The idea that a woman would base her decision to have an abortion on a desire to donate fetal tissue for medical research is as ridiculous as the notion that an individual would purposely have a car accident in order to donate his organs for transplantation.

Tech: What about federally-funded stem cell research?

Schiff: While I recognize the important issues surrounding stem cell research, the potential benefits simply cannot be ignored. We have an obligation to those diagnosed with Parkinson's disease, heart dis-

ease, multiple sclerosis, diabetes, and those suffering from burn and spinal cord injuries to explore every avenue that could lead to the development of treat-



Senator Adam Schiff

ments, alleviate their suffering and eventually result in cures. The use of federal funds for stem cell research is in the public's best interest. First, federal funding leads to an open research environment and with it comes a greater exchange of data. Second, federal funding increases the fiscal resources and attracts talented scientists, leading to an accelerated pace of scientific discovery. Finally, government involvement allows for government oversight, which is particularly meaningful considering the ethical issues surrounding stem cell research.

Tech: To what extent should the Food and Drug Administration regulate the production of genetically-modified (GM) food?

Schiff: First, the FDA must ensure that these food products are indeed safe. Currently, all foods, whether naturally pro-

duced or genetically-modified, must meet the standards of the Federal Food, Drug, and Cosmetic Act. Second, even if the FDA determines that a modified food is safe, the public should know if they are consuming a food product that has been genetically-modified. This, in and of itself, is an interesting challenge and one would be hard pressed to and a food product in a supermarket that has not been modified in one form or another. Under current regulations, the FDA requires labeling on genetically-modified foods that contain genes transferred

from a food that could cause an allergic reaction or if the genetic modification significantly changes a food's composition. Such labeling helps inform consumers and allow them to decide whether to purchase genetically-modified food products.

Tech: In the long-run, should the United States pursue a Strategic Defense Initiative using ground-based anti-missile technology? If so, on what time schedule?

Schiff: Although the Cold War is over, rogue nations still threaten the United States. A National Missile Defense system would allow the military to defend us against ballistic-missile attacks. In order to protect American interests, the military should continue research and development on missile defense technology. Prior to the deployment of this system, we must be confident that the system is in-

deed effective against all targets. At the same time, we must negotiate an amendment to the Anti-Ballistic Missile Treaty so the development of such a system does not result in destabilization.

Tech: Again, if so, how would you react to constituents in the scientific community who are skeptical of the feasibility or effectiveness of such a system, especially when these same engineers might be critical to planning and building such a system?

Schiff: Given some of the unsatisfactory tests of the missile defense system, some skepticism is natural. But the American scientific community has overcome more significant challenges in the past, and can do so again. Coordinating with the scientific community to pursue the modest productive design will be integral to its success.

Tech: Several NASA missions have failed to accomplish their objectives over the last two years. What do you see as the short-and long-term roles and goals of our national space program?

Schiff: One of my top priorities as a Congressman is to strengthen the nation's confidence in our nation's space exploration program. The 27th District is the home of NASA's Jet Propulsion Laboratory and the California Institute of Technology. A reduction in space science funding would not only be detrimental to our local economy, but to our national interest as well. As a State Senator, I authored a resolution urging Congress to provide full funding for science and research, and have sought state funding for Caltech and JPL to supplement the federal effort. As part of my long term plan, I will work to increase the amount of

resources we invest in space exploration. The scientific research achieved through our national space program spawns new technologies and advances in medicine that have real and immediate benefits here on earth. As a member of Congress, I will continue to work for full funding of JPL and the National Science Foundation and would be very proud to follow in the footsteps of leaders like the late George Brown.

Tech: Do you support the federal taxation of Internet sales?

Schiff: Electronic commerce is one of the fastest growing sectors of the New Economy and will provide numerous jobs and unimaginable opportunities in the future. For these reasons, I fully support the growth of electronic commerce. Information should flow freely across the Internet, which is why I support a moratorium on Internet taxes. As a State Senator, I was one of the few members of my party to vote against placing any tax on Internet sales. I also support the Internet Tax Freedom Act of 1998, which states that the Internet should remain a tax-free zone while the issues surrounding the Internet are explored in greater detail.

Tech: How has science affected your own life?

Schiff: I have a great interest and fascination with science and while my undergraduate focus was on political science, I took years of Physics, Biology and Chemistry. This has been the subject of lifelong learning, however, and I just completed listening to Professor Richard Feynman's [sic] lectures on CD. I passionately believe in science's ability to improve the quality of people's lives, to tap the depths of human potential and I intend to be a champion of the sciences in Congress.

Politics and world news

Congressman Jim Rogan (Republican) on Science and Technology:

There is no bigger fan in Congress of NASA, Caltech, and JPL than myself. I am proud to have fought over the last your years to help ensure funding for these institutions and their affiliates like Caltech. Every penny we invest in NASA missions and in research and development will yield great returns in the future, when manned exploration becomes the rule, not the exception.

I support missions to Mars and beyond and support development of the space station and continued shuttle missions. It is our duty in Congress to support cutting edge research and to ensure that sound science is reflected in decisions we make affecting exploration and development of space missions.

I am honored to serve the Caltech community in Congress, and will work in the future to continue implementing



Congressman Jim Rogan

sound policies. In my tenure in Congress, I have supported a moratorium on Internet taxes, fought to protect the integrity of Internet domain names, and worked to provide a tax credit for private and public sector research.

mindful of what science means to me, my daughters and to all of our future.

For more information, both Sen. Schiff and Cong. Rogan have campaign websites at <http://www.adamschiff2000.com> and <http://www.jimrogan.org>

Finally, on a personal note: science and the skills produced at institutions like Caltech have carried our country to preeminence around the world – in the fields of technology, manufacturing and exploration. Science has added much to all of our lives, and as I work in Congress I am

The Outside World

by Erik Dill

Los Angeles - The Metro Transit Strike ended after 32 days. All fares are free through October 22nd.

Israel - Israeli and Palestinian leaders have agreed to try calming the violence which has engulfed the region over the past few weeks.

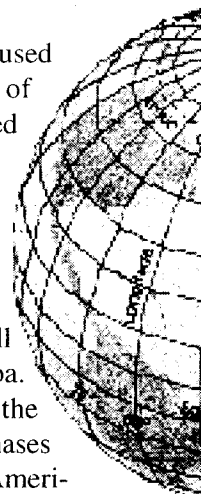
Aden, Yemen - Bodies of all 17 sailors killed by an alleged terrorist attack on the cruise missile destroyer USS Cole have been recovered.

Lagos, Nigeria - Riots between a Yoruba group and Hausa merchants in Nigeria's commercial center have resulted in over 100 casualties.

Sion, Switzerland - Heavy rain in the Alps caused landslides, one of which buried the village of Gondo. Dozens of other casualties were reported across Italy and Switzerland.

Britain - Amnesty International reports that torture of prisoners is on the rise worldwide. Rape and use of electroshock devices are the biggest problems in the U.S.

Washington, D.C. - The Senate approved a bill which would ease food sanctions against Cuba. 800,000 Cubans, led by Fidel Castro, protested the measure because the bill would make food purchases difficult to finance and would further restrict American travel to Cuba.



Perspective on partisan politics

"Go ahead, throw your vote away!"

I always chuckle when I think of the Simpsons episode where Ross Perot loses the presidential election to alien monsters running for office. But are there really more options than the traditional two parties? I've long held the political affiliation of being a Democrat with a Republican wallet. I like (some) liberal domestic policies, but I much prefer conservative economics. So let's begin with me, then, since I'm the guy with your attention at the moment. I'm a minority that doesn't believe in affirmative action. I am pro-choice. I choose to be pro-life. Yet I believe in the death sentence. But I also, maybe sentimentally, believe that we live in an enlightened society, where individuals are smart enough to think for themselves.

Not enough credit is given to individuals and their intelligence. Consider: if you stopped reading the article before this point, you'll never know that

I'm about to insult you. That's because you didn't care what I had to say. You just went ahead and let me say it. Because of those who stopped caring, the people who kept talking became very, very dangerous.

When I was a student, I hated the fact that even if I slept through lunch, I would be charged for it. The mere fact of 11:30am occurring meant that \$7 of my personal wealth disappeared. Complaining is step zero. Fixing it is step one. There is no step two. So I moved off campus, and ate at the random hours when I was hungry. I may have decided to pay \$7, but I did it on my own terms. Personal freedom was once again restored.

This is the basis of Libertarianism. The government has grown beyond its intended scope. Constitutional rights represent the basics of what is allowed in our society, and the government should exist to maintain those rights.

Everything else is none of its business. Both Republicans and Democrats want censorship to a certain degree, even though nowhere in the Constitution is there an amendment saying that I have to wear my Sunday best. They both want to wage a war on drugs, even though the only jurisdiction the federal govern-

ment has is over forgery, treason, and piracy.

And they also want to take a chunk of my wages to pay for someone else's retirement. Pat Buchanan wants life to be like a 1960's family show, and Ralph Nader is full of nothing but soy-eating, tree-hugging crap. All these men think they know what's best for me.

Watch this: I think Kim West is a moron and is out of touch from the people she's meant to unify. Abortions, the purchase of guns, and homosexual marriage should all be legal and hassle-free, the war on drugs is just prohibition all over again, and I'm a bigot who doesn't like the color of your skin, so I don't have to hire you if I don't want to.

Too much of society relies on someone else taking the blame. Look at all the controversial things I just said. Is it now the Tech's responsibility to censor me? No, it is now on the reader to agree or disagree.

Libertarianism promotes the ability for people to make decisions on their own. Accountability rests solely with me: What I said earlier may incur the wrath of Residence Life. I'm prepared to accept that. My lack of parenting ability is turning my kid into a criminal hoodlum. I'm prepared to accept that, too. My medical expenses are running high because of complications with my abortion. I'm prepared to accept that.

Every insult I spit out, every needle I stick in me, every incompetent employee I hire, it's all my fault. I won't complain when the libel suit arrives or when my liver stops working. If a competing business makes

more money because they hired a smart white guy, and I'm stuck here with my bigoted "Filipino Guys Named Ron Only" policy, guess how much sympathy I'll be looking for when I go out of business.

The closest that any of the beltway candidates come to Libertarian policy is the Republican school voucher program, also known as Prop 38 here in California. Liberal opposition cites it as saying that we don't know what these teachers are teaching, we don't know if they're qualified, we don't know blah blah blah.

The Democrats are playing into your ignorance! If I had a voucher that allowed my kids to attend a private school, you bet that I would give each school due diligence before finally deciding which one Junior would attend. The Democrats are mistaking me for an idiot. They even think that I'd need a social security backbone for when I retire. To the Democratic party, I'm retiring at age 25. No more contributions from me, meaning that a flawed system is in an even deeper hole without me.

All the non-Constitutional government programs, like health care, retirement or education, would be fully privatized. But if you sit down and imagine what the country would be like under a Libertarian system, you would come to the realization that increased privatization may increase costs in all areas of life.

But government wouldn't need to be this large. All the programs that told you what to do, they would no longer need funding. Taxes would be dramatically slashed. Don't say that I

just don't want to pay taxes. I will gladly pay the city taxes to pay for cops to keep the streets safe. I will gladly pay the state taxes to pay for road maintenance. But why should I pay the federal government when part of it goes to pay for someone else's pills?

I believe in your right to get medical treatment if you want, but do you think that I'd give you some money so that it can happen? Does it say idiot on my shirt?

On the flip side, privatization could promote streamlining in these areas, and the increased efficiency would result on lower costs. Business aren't scared of stupid consumers. They're scared of smart consumers who come to the realization that their product is inferior. That's why Sun and Netscape are scared of Microsoft, but Linux isn't. AMD could have filed a suit against Intel, but it decided instead to make better products. In that respect, innovation would occur in all realms of life.

I could go on and on about what the Libertarians would do for our country, but I trust that if this is something that intrigues you, that you'll look into it yourself. If you've read this far and aren't moved by any of my words, I still thank you for your time. The Libertarian candidate this year is Harry Browne, along with running-mate Art Olivier. They're not trying to be the moral authority. And they're not hear to babysit you, either. I'm not telling for whom you should vote. You should be smart enough to figure that one out.

Ron Dollete
Hardware Engineer
Ixia Communications

ASCIT Minutes

ASCIT Minutes

OCTOBER 9 & 16, 2000

Meeting of October 9, 2000

Present: BoD; Guests: Dave Guskin; Pep Band - Chad Kishimoto, Justin Kao

Meeting called to order at 10:06 pm.

We have the same agenda as last week, but with more things to say. We will attempt to make this our "shortest meeting ever!"

Our friend Dave Guskin, the little t editor, says that he expects the books to come back from the publisher on Thursday or Friday of this week. Add a day for the autographs and they should be in our mailboxes at the end of this week or the beginning of next week. We'll invite Nate Austin to next week's meeting to discuss little t finances.

The Pep Club asks for \$900 in funding for equipment and start-up costs. This newly formed club has about 20 ASCIT members. Eric asks them to fill out the form on <http://www.its/~ascit/bm2000.html> before requesting funding. They will come back next week.

Marcel, the manager of the Coffeehouse, just got back from Europe and is starting things up again. He doesn't respond to phone messages or email though. What's up with that? In other Coffeehouse news, Chris is still work-

ing on getting a Super NES system.

Sean says that he has our updated budget on his computer, but he couldn't get it to print on the Fleming printer. We find old bank statements under the ASCIT office coffee table to give to Sean. He'll enter those into his computer and will bring the budget to our next meeting for our financial edification.

Meghan reports that the Big T has been having some publication problems. Laura volunteers to help out and to get the ever-elusive Erik Dill to come to our next meeting. Martha-Helene will also ask Erik about the ASCIT page in the Big T.

New development in the Screening Room - we've picked out a TV! Sean will check prices on the web since the best buys are not always at Fry's. Eric will talk to Tom Mannion about security issues for the Screening Room.

Martha-Helene will update the club mailing list. She'll email the donut people for a list of clubs that have registered on their site, since that's a new requirement for clubs to receive funding. It will also be important for clubs to post their events on the main calendar on the donut page, since, in the future, that info will be used by ASCIT to decide how much to fund each club.

Eric recently went to an Alumni Association meeting. They put him on their committee for club funding. On a side note, he informs Chris that the alumni want to talk to the IHC about having each house's alumni event on the same day. Eric also talked to their treasurer about the Caltech endowment and is now very confident about investing money in it. The rate of re-

turn was 30% last year. We should start the endowment as soon as possible, because every minute we wait is a minute we're not earning interest. Eric also reports that the alumni would like more student input this year for their honorary alumnus awards. The BoD will think of some people to nominate (suggestions are welcome).

Wes, the Movie Chair, has got the DVD library under control. Shelves are currently being built in the coffeehouse by Lloydie handyman James Burgess. A list of titles in the movie library is also being compiled.

The lost ASCIT lights will cost \$750 to replace. Caltech dj's Dan Liebling and Ted Jou will go shopping for some decent equipment. Melinda also reports that Gurt found some lights in Fleming's social closet.

According to Patti, our accountant, the IRS audit is over. We breathe a collective sigh of relief. Eric will contact the Caltech lawyers for more details.

Eric will send the donut people CLUE data to put up on the web page. Their priority right now is to get the main ASCIT site moved over to donut.caltech.edu. Chris agrees to be their "supervisor." Though they don't seem to need one, we just like the extra bureaucracy.

Eric apologizes for missing Friday morning donuts last week. Laura will go with Eric this Friday and donuts will be there at 8am sharp, we promise.

Emma gives a report on the ARC. They are doing a survey about CS 1, to see if students approve of the current curriculum. Eric suggests that the ARC should interview the current CS 1 TA's about what they think about

this year compared with previous years. Also, the ARC decided that the option books, though they were a good idea, require way too much time and energy and instead frosh should be encouraged to talk to their student option advisers. They are also thinking about adding professors to the adviser list.

The ISO office, currently located next to Lloyd, will not be moving this year. Someday, they will move to the new student center (formerly known as Keck).

Meeting adjourns at 11:04 pm.

October 16, 2000

Present: BoD; Guests: Nate Austin; Pep Club - Chad Kishimoto, Justin Kao

Meeting called to order at 10:05 pm.

The Pep Club guys are back with a written proposal. They need \$1000, mostly for instruments and music, and are planning to perform at Caltech basketball games and other athletic events. Their repertoire includes the Caltech fight song and they currently practice once a week.

Nate Austin, the little t business manager, has talked to the publisher who now says the little t should be ready by next Wednesday instead of this week as originally thought, though the little t was submitted to them back in August. The contract said that the book should have been ready 15-20 days from the receipt of "camera ready art" and it has definitely been longer than that. Nate will call them and (nicely) demand lateness compensation. Also, the little t

is over budget by \$400, which the BoD assures will not come out of Nate's pocket. On a side note, Nate says that the Student Shop is asking for funding, though they did not request at the Budget Meeting. Eric tells them to email Martha-Helene.

Sean shows us our current balance sheet. A few people have picked up checks, but have still not cashed them, which brings up the question of how to recognize the revenue. Sean will compare how our budget matches what we've currently spent. He also has a list of clubs who never requested funding for third term last year.

Melinda received a call from the Huntington saying that we still owe \$14,000 for the formal last year. We definitely do not and Sean has the cashed checks to prove it. Melinda is still working on the formal's financial situation. There are still people out there who have not paid her yet. The BoD thinks about sending Sean to give them an offer they can't refuse. Somebody mentions bringing along a pair of pliers and a blowtorch.

We decide to fund the Pep Club up to \$250 for the purchase of one instrument. Martha-Helene will help them pick one out. We also recommend that they charge member dues to cover the rest of their costs. The BoD worries about how long the club will last. In the event that the club disbands early, the instrument will go to the Jamroom.

Eric has been making process on the Screening Room. He met with Tom Mannion to talk about modifications to SAC 35, which include adding a card reader on the door, installing a new carpet, adding risers and couches,

PLEASE SEE ASCIT ON PAGE 9

Two events OF EPIC PROPORTIONS
THAT WILL ROCK YOUR WORLD.

NOVEMBER 9, 2000**2PM - 6PM****CARRIAGE HOUSE (NEXT TO THE STEEL HOUSE)**

CIM Vision International will be holding a company information session at Cal Tech. **Don't miss out on our raffle drawing for a Pocket PC!** Participate in an interactive discussion with the President/CEO of CIM Vision International. Get an insight for what is going on in the e-Business and e-Commerce industries. All Computer Science/Engineering majors are encouraged to attend.

NOVEMBER 17, 2000**8:30AM - 4:30PM****3RD FLOOR CAREER SERVICES**

On-campus recruiting for software developers to work in Long Beach, CA. All Computer Science/Engineering majors are encouraged to attend.

Resume & Interviewing Workshops

WHEN:**Resume Workshops****October 26 & 27****12 noon****Interviewing Workshops****November 6 & 7****12 noon****WHERE:****Career Development Center****414 S. Holliston Avenue****3rd Floor Conference Room*****Space is limited to the first 40 people.**

**Contact the Career Development Center
at ext 6361 for more information.**



More ASCIT/More Comics

ASCIT:

CONTINUED FROM PAGE 8

and installing a lockable equipment cabinet, all of which will be funded by Tom. The bookshelves currently in SAC 35 will be moved to the old arcade room, which is going to be turned into a student lounge/study area. The old jukebox from the Coffeehouse will be moved to the study room as well.

Marcel says that the Coffeehouse will be opening soon. Melinda suggests having an open mike/Bohemian night again, since it was very popular last year. Chris has already purchased the SNES for the back room. The shelves for the DVD library have been built and the computerized check out system is still being developed.

The BoD wonders what is going on with the Big T, since we still can't get Erik Dill to come to our meetings. Meghan will try contacting him again. She will also ask the new Big T editor Jake West to help out.

Eric talked to the donut web designers about adding a message of the day feature to the web page. They are really doing a great job, so the BoD approves \$1000 for their salary.

Should ASCIT have a 1950's-style sock hop first term? GUSH is willing to cosponsor an event with us. Melinda is also working with Harvey Mudd to have a "double the ratio day,"

where people would be transported to the other school for a day to double the ratio. We are also still thinking about doing a joint party with Scripps. Melinda says that Dan and Ted are having fun shopping for the new ASCIT lights.

There is a new faculty chair for the Core Curriculum Committee who is interested in getting more students involved. The ARC will appoint 2 reps and 2 alternates.

Chris asks the BoD to give a blanket approval for the people the IHC just appointed to committees. They are Heather Graven and Todd Schuman (alternate) for the Grievance Committee and BJ Horn and Amy Duello for the Student Housing Committee. We unanimously approve.

Eric talked to the Caltech lawyers and received the official word that the IRS audit is off. He is still looking into the endowment, which should be started soon because every minute we wait is a minute we're not earning interest.

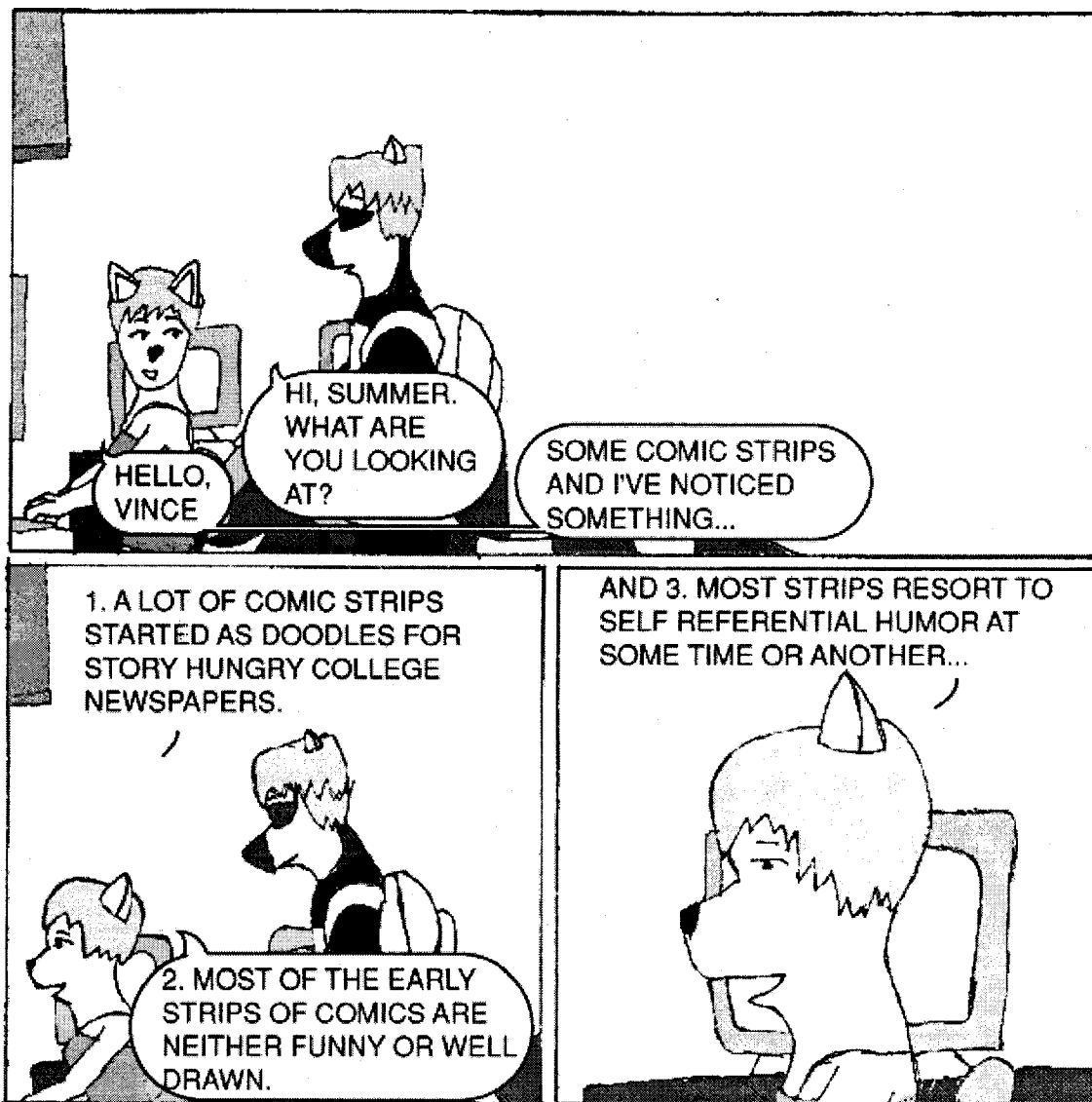
According to Barbara Green, there will be a leadership conference in November for college students in the LA area. The BoD compiles a possible list of student leaders. We will also keep thinking of people to recommend as honorary alumni.

Meeting adjourns at 12:06 am.

Jon C. Carlson

Vanilla

by Jason Mitchell

ringtail@ugcs <http://www.vanilla-the-comic.com>

(c)2000, Jason Mitchell



Bring it

Where it matters most.

As one of the world's leading diversified technology companies, we're breaking new ground in everything from **defense and commercial electronics**, and **business aviation and special mission aircraft**. As a Raytheon employee, you'll contribute to the development of exciting, revolutionary technology designed to make life better, easier, and safer throughout the world. Such as our *STARS* air traffic control system. And our award-winning *NightSight™* technology.

But it all starts with you. Your creativity. Your knowledge and innovation. And enthusiasm about the future. In return, we offer exceptional training and professional development opportunities. A supportive, down-to-earth work environment. And incredible benefits including flexible schedules designed to respect your quality of life.

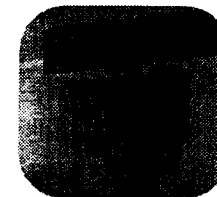
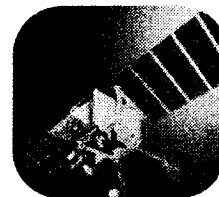
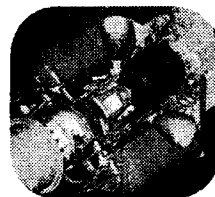
So you can still show off all those great qualities of yours outside of work, too.

We'll be visiting your campus soon — contact your career placement office to schedule an interview. If you are unable to meet with us, please send your resume to: **E-mail: resume@rayjobs.com** (ASCII text only; no attachments). **Raytheon Company, Attn: National Staffing Data Center, P.O. Box 660246, MS-201, Dallas, TX 75266.** U.S. Citizenship may be required. We are an equal opportunity employer.

Opportunities are available for exceptional students with the following majors:

- Computer Science
- Computer Engineering
- Electrical Engineering
- Mechanical Engineering
- Math
- Physics
- Chemical Engineering
- Aeronautical Engineering
- Finance/Accounting
- Human Resources
- Industrial and Labor Relations
- Marketing/Communications
- Management

Check out our Website at **www.rayjobs.com/campus** for further information including a calendar of recruiting events. At Raytheon, we strive to be the employer of choice for a diverse workforce by attracting, retaining, and recognizing the most talented, resourceful and creative people.



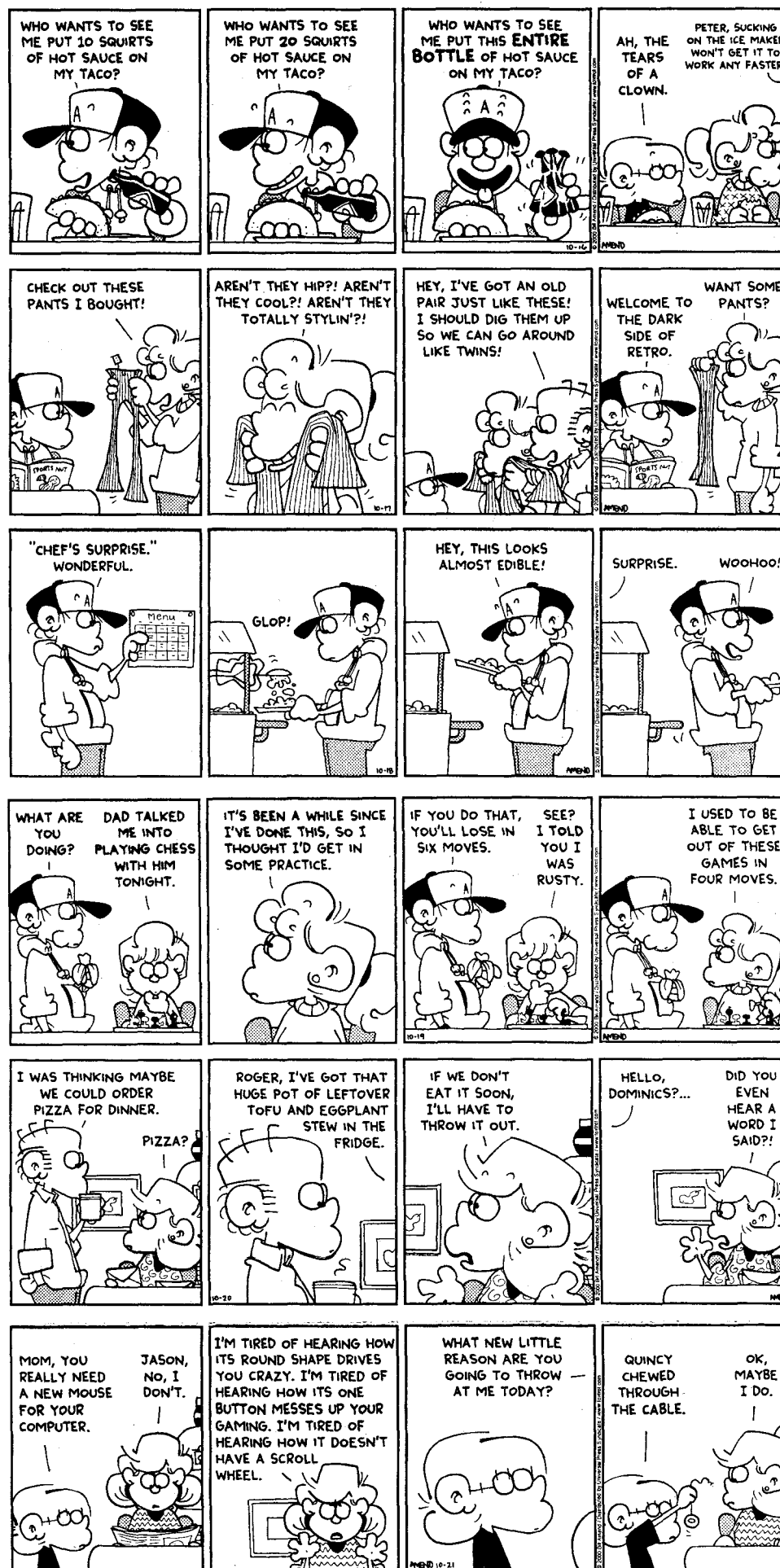
Bringing technology to the edge

Raytheon

Comics

DILBERT® by Scott Adams

FoxTrot by Bill Amend



Y news

by Kenneth Kuo

In my last article, I introduced you to the broad array of outdoor and community service activities the Caltech Y sponsors. This week, I will inform you of some specific events we have planned.

Today, we will feature the band "Snotty Scotty and the Hankies" as part of our continuing Noon Concert series. The band will

be at the north end of Winnett Student Center from 12 - 1 p.m.

In addition, community service activities abound. The events listed are one-time events which will occupy about one-half of one's day. So if you feel you have nothing to do on a particular date, please help out.

Service activities: (1) Sunday, 10/29/2000 - Avon Breast Cancer Awareness - Help staff the finish line of the three-day walk at Zuma Beach in Malibu, (2) Saturday, 11/04/2000 - L.A. River Clean Up, (3) Saturday, 11/19/2000 - Habitat for Humanity -

Travel to an El Monte site to help with the current housing project, and (4) Saturday, 11/19/2000 - Union Station project

For more information regarding any of the above activities, and/or to sign up, please contact Kristin Abbott at kabbott@its.caltech.edu or x6163.

As a reminder, the Caltech Y Executive Committee meetings are open to all undergraduate and graduate students. They are held on the first floor of the former Keck House (now the Center for Student Services). Meetings start at 12:15 p.m. on Mondays.

LAEMMLE THEATRES
 PASADENA CINEMAS
 Bargain Shows in 1! Dolby Digital Sound
PLAYHOUSE 7
 673 E. Colorado Blvd. (626) 44-6500
BEST IN SHOW (PG-13)
 Fri. - Thu. [11:30] 1:40 3:50 6:00 8:10 10:20
DANCER IN THE DARK (R)
 Fri. - Thu. [11:30] 2:35 5:40 8:45
No One Under 17 Will Be Admitted
REQUIEM FOR A DREAM (NR)
 Fri. - Thu. [12:15] 2:40 5:05 7:30 9:55
On 2 Screens
THE CONTENDER (R)
 Fri. - Thu. [11:30 1:15] 2:25 4:05 5:20 7:00 8:15 9:50
DR. T AND THE WOMEN (R)
 Fri. - Thu. [1:45] 4:30 7:15 10:00
DECALOGUE SEVEN AND DECALOGUE EIGHT (NR)
 Fri. - Thu. [11:30] 2:00 4:35 7:10 9:45
Saturday & Sunday 11:00 am
World Cinema:
THE CARRIERS ARE WAITING (Belgium)
Academy Qualification:
My Lazy White Friends 11:00am
Living Dolls 11:30am
COLORADO
 2588 E. Colorado (626) 735-9704
BILLY ELLIOT (R)
 Fri. & Mon. - Thu. [3:30] 6:00 8:30
 Sat. & Sun. [1:00] 3:30 6:00 8:30
 VISIT OUR WEBSITE: www.laemmle.com *****

STUDENT TRAVEL

CHANGE YOUR WORLD!

STA TRAVEL

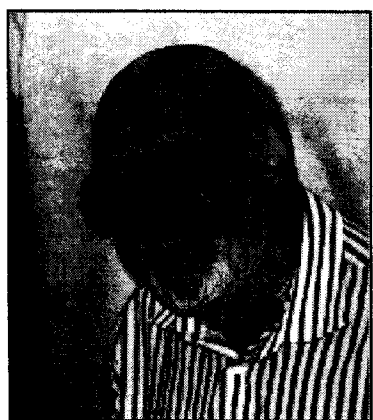
323.934.8722
7202 Melrose Ave.www.statravel.com

Crème de la crème

Dean's Corner

Rosie the Riveter

by Jean-Paul Revel



In the Oct. 10 Los Angeles Times, columnist Melissa Lambert commented on the Senate passage of a bill establishing "Rosie the Riveter National Historical Park" in Richmond, California. It seems that during World War II, several large shipyards were located in Richmond and many locals worked there as part of the war effort. Hence the Park. It might seem odd, however, that Rosie, the person after whom the Park is named, did not work there. That's because, like Smoky the bear, she is a fictitious character. But there were many local women working at the shipyard, a few of them as welders. Among these was Ludie Mitchell, an 18-year-old, who signed up as a riveter. Ludie recently gave some talks at the local high school, recounting her wartime experiences. She recalled that, surprise!, "Welding was hard work." Very perceptive that, don't you think? "But I didn't know at the time that it was hard work." Well, so much for discomfiment. She apparently knew

nothing about riveting when she started working. She didn't even know what welding was. "I couldn't set the machine on the first day, and I started crying," she is reported to have said. "I didn't know what I was doing and felt I was in way over my head."

Now tell me, is that a familiar complaint or not? The flesh and blood of Rosie's concerns were not essentially different from those of many incoming students who also express feelings of inadequacy. It doesn't seem possible to them that they'll ever be able to rise to the challenge and do well at Caltech. But the naïve riveteer herself, after taking some instruction, found that she could in fact hold her own with the cream of weldingdom: "My welding got to be really pretty," she says, "and after a while they let me weld on the outside [of the ship]." And our students also quickly get to the point where their work can be shown "outside."

The sad part is that self-doubt is a common plague of high achievers. Perhaps they are driven to work

hard because they question their abilities and so, as a result of applying themselves, do especially well. Eventually they come to expect that their performance will always be superior. On arriving here, in a new environment, it gets more important than ever for them to demonstrate that they are indeed at the top of the heap. If they don't succeed at this, they become convinced that they are about to fail. Along with feeling inadequate, there can also be a sometimes paralyzing fear of not being seen by others as top dog. It is an embarrassment, a shame, they feel, to be seen wanting.

I will repeat here what you have already heard many times: "Admissions does not make mistakes." We feel quite sanguine about this. Your record has been examined by several Admissions professionals and by upperclass student volunteers, and you have been vetted by a gaggle of dedicated professors. All of these people independently read your applications, evaluated the things your teachers wrote about you, and considered the results of the various tests you took. After that, a subset of the same people discussed each applicant individually before a decision was made

about your coming here. So, however you feel inside, we are quite confident that you are the kind of person who can prosper here.

Comforting as this knowledge should be, I doubt that it will be sufficient to cure your butterflies. You need to take other steps. One is to do just what Ludie seems to have done. After her initial panic, she worked systematically to overcome her shortcomings. She took welding classes and kept going till her work could be displayed for all to see. You may have to swallow your pride and seek help from others, perhaps your classmates, or your TA. Talk things out with the RA in your House, consult your advisor, or see us in the Dean's Office. You might even consider going to see the professor or getting help from a tutor. All you

have to do to see a tutor is to come to our office, maybe have a cookie and a soft drink, and sign up. Remember, your greater goal is to acquire the knowledge on which to base your future, your exciting career. You should feel no shame in asking for help or doing whatever else you must to profit from your Caltech experience. Sometimes all that stands between you and stellar success is a "detail" which is essential to understanding. Things will go much more smoothly once you, with the help of others, identify the source of the problem. Sometimes the difficulty will just be unrealistic expectations of yourself. You might want to talk to

someone in the Counseling Center to better understand yourself, and learn how to catch and neutralize the butterflies in your stomach. The students who do not do well are generally those who, instead of systematically buckling down and concentrating on what needs to be done, despair and give up. If they cannot be the best, what is the point?

They don't do the homework, they skip the lectures. Oh, I know, you have been up late, the lectures are much too early in the morning, you need more sleep, you may even think it's cool to skip. The homework can wait till tomorrow when you'll feel better. You may dull your feelings by playing games, surfing the net, reading novels, or spending hours schmoozing. There are many more ways in which to waste your time, but I am sure you get the idea without me going on.

Remember that whatever your class standing right now, you are still the cream of the cream. Every last one of you has shown great promise, and just about every last one of you will graduate with a wide choice of careers open to you. We know that you'll make us proud. Please avail yourself of one of the many butterfly nets that are within your reach. If you can't do it on your own, don't hesitate to come and talk.

A bientot!

Jean Paul Revel



Victory 2000

"Education With A Purpose"

Governor Bush will reform the nation's Public Schools, as he has in Texas, which is one of two states that have made the greatest recent progress in education. He will close the Achievement Gap, set high standards, promote character education, and ensure school safety. States will be offered freedom from federal regulation, but will be held accountable for results. Performance will be measured annually, and parents will be empowered with information and choices.

VOTE BUSH/CHENEY ON NOVEMBER 7, 2000

Paid for by the Pasadena Republican Club

To Register to Vote or to Volunteer
Call 626/793-2018 Fax 626/793-2546
Website: www.pasadenarepublican.org

Opportunity Is Now In Season!

Disneyland® Resort

Fall Festival of Jobs

The Disneyland Resort
Mickey & Friends Parking Structure
October 26 - 28, 2000
8am - 6pm

Come out and enjoy the autumn air as you harvest opportunities across the entire Disneyland Resort. It's the perfect time of year to find roles in **Store Operations, Food Operations, Hotel Culinary and more!**

Plus you'll find roles at **ESPNZONE**, the ultimate sports dining and entertainment complex, located in Downtown Disney.

For more information visit www.espnzone.com

So grab your coat and call the **Disneyland Resort Jobline at 800-766-0888** to begin the application process. Or visit us at DisneyCareers.com for professional opportunities. Then get ready to Experience The Magic At Work season after season!

EOE • Creating Magic Through Diversity • ©Disney

Mints

ANNOUNCEMENTS

CIT Guitar Classes for the spring quarter will meet on Tuesdays in SAC Room 1, starting on October 3 as follows: Beginning Guitar Class: 4:30 PM - 5:30 PM, Intermediate Guitar Class: 3:00 PM - 4:00 PM, Advanced Guitar Class: 5:30 PM - 6:30 PM. Classical and flamenco repertoires are explored, but techniques transfer to other styles of guitar. The Beginning Class includes a jazz/folk chord system. Classes are free to Caltech students and other members of the Caltech community (space permitting). Undergrads can receive 3 units of credit. The instructor, Darryl Denning, has an international background in performance, teaching and recording (two of his CDs are available in the Bookstore). Mr. Denning can be reached at (323) 465-0881 or by email at ddenning@caltech.edu. The Guitar Home Page is at: www.cco.caltech.edu/~musicpgm/guitar.html

The **Caltech Ballroom Dance Club** [CBDC] continues its offerings of dance classes and parties for the new term. **Beginning West Coast Swing** - taught by a professional dance instructor, five week series starting Mon 2 Oct'00: \$20/series for undergraduates, \$30/series for others. The lessons will be held from 7:30 to 9:00 pm on Mon in the Winnett Lounge with a 1/2 hr. practice period after each lesson. Refreshments will be provided, and no partner is required. **Beginning Argentine Tango** - "Amateur"-taught, four week series starting Wed 4 Oct'00, free for undergraduates, \$1.00/lesson for others. The lessons will be held from 7:30 to 9:00 pm on Wed in the Winnett Lounge, with refreshments and a 1/2 hr. practice period after each lesson. Refreshments will be provided, and no partner is required.

For last minute changes see its.caltech.edu/~ballroom, or call Don at 626-791-3103

EVENTS

The **Caltech Ballroom Dance Club** hosts a series of weekly "mini-parties", i.e., no lesson/demonstration or theme as done for the "regular" parties. The parties are free and take place in Winnett Lounge after each

pro-taught class [West Coast Swing for the first half of the Fall'00 term and probably the Lindy for the second half] on Mon from 9:00-11:00pm. Refreshments are provided and no partner is required. From 9:00 to 9:30pm music pertaining to the previous class will be played, but after 9:30pm feel free to make requests or bring your own music.

A Milonga [Argentine Dance Party], will be held 8:00-11:59 pm in Dabney Lounge Fri 20 Oct'00. The party is free, refreshments will be provided, and no partner is required. For last minute changes see its.caltech.edu/~ballroom, or call Don at 626-791-3103

Science, Ethics, and Public Policy Lecture Series for Fall Quarter 2000:

Dr. Andrew Scull, Professor of Sociology and Science Studies, The University of California, San Diego, **Combating the Perils of Pus Infection: A Cautionary Tale from the History of Psychiatry**, Wednesday, October 18, 2000 4:00 p.m. Room 25 Baxter Building

Dr. Myles W. Jackson, Assistant Professor of the History of Science, Willamette University, **The Standardization of Aesthetic Qualities: Physics and Music in Nineteenth-Century Germany**, Thursday, November 9, 2000 4:00 p.m. Room 25 Baxter Building

The William and Myrtle Harris Distinguished Lectureship in Science and Civilization presents Dr. Peter Galison, Professor of the History of Science and of Physics, Harvard University, **Poincaré's Maps and Einstein's Clocks**, Friday, December 1, 2000 4:00 p.m. Beckman Institute Auditorium

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. For a complete list of SEPP Seminars and Harris Lectures scheduled for this academic year visit our Website: <http://www.hss.caltech.edu/ses/SEPP.html>

Ballroom Dance Party, free: 9:30 to 11:30 pm Mon 6 Mar'00 in Winnett Lounge. On a trial basis the Caltech Ballroom Dance Club has started a series of weekly mini-parties after our regular lesson on Mondays. The Viennese Waltz lesson ends at 9:00pm. You are welcome to join in the practice ses-

sion which lasts until 9:30pm followed by the party and open dancing until 11:30pm. Refreshments will be provided and you need not bring a partner.

Music of the late 20th century to be featured in April 12 Dabney Lounge Concert. The Division of Humanities and Social Science will offer a free concert, open to the Caltech community, on Wednesday, April 12, 8:00 PM, in Dabney Lounge, as part of the division's music offerings for benefit of students enrolled in music courses and the community at large. Members of The St. Matthew's Chamber Orchestra, Thomas Neenan, Music Director and Conductor (and Lecturer in Music at Caltech) will be joined by composers William Kraft and John M. Kennedy for an informal look at music at the turn of the new century. Featured will be conversation with the composers and Neenan about the music to be performed which will include Kraft's "Concerto for Percussion and Chamber Ensemble" and works by Kennedy, Tan Dun and others.

SCHOLARSHIP

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 515 S. Wilson, second floor.

* The Measurement Science Conference (MSC) has established scholarships to students in an Engineering or Science or Quality Assurance degree program. The scholarship program places emphasis on papers or projects that discuss the advancement of measurement science technology. Applicants must be U.S. citizens, have a overall grade point average of 3.2 or higher, completed at 24 units of upper division courses in Engineering or Science degree or five courses in a Masters Degree Program in Quality Assurance. Current mem-

bers of the Measurement Science Conference Committee are ineligible for this scholarship award. Also, applicants must be able to attend the Measurement Science Conference luncheon held on January 18, 2001, at the Disneyland Convention Center in Anaheim, California. Applications are available in the Financial Aid Office. For further information regarding MSC Scholarships, you may contact: Rick Careyette, MSC Scholarships Chairperson, Teledyne Electronics Technologies, Marina del Rey Facility, 12964 Panama Street, Los Angeles, CA 90066-6534. Entries must be submitted to Teledyne Electronics Technologies by December 1, 2000.

* The AFCEA Copernicus Foundation is offering a \$2,000 scholarship to eligible students working towards an undergraduate technology degree in the fields of computer engineering technology, computer information systems, and electronics engineering technology. Applicants must be enrolled full-time in a technology related curriculum at any four-year institution in the U.S., be a U.S. citizen, and be a sophomore or junior at the time of application. Special consideration will be given to military enlisted candidates. For further information regarding the AFCEA Copernicus Foundation Scholarship, you may contact: Norma Corrales at (703) 631-6149, e-mail scholarship@afcea.org, or visit their web site at www.afcea.org. Entries must be submitted to AFCEA Educational Foundation by November 1, 2000.

* The National Academy for Nuclear Training is offering \$2,500 scholarships to eligible students majoring in nuclear engineering, power generation health physics, electrical or mechanical engineering, or chemical engineering with nuclear or power option. Applicants must be U.S. Citizens, enrolled full-time in a four-year accredited institution,

minimum GPA of 3.0 or higher, and interested in nuclear power careers. Additionally, scholarships will be renewed for current Academy scholars who maintain their eligibility. For further information on the National Academy Educational Assistance programs, please visit www.nei.org. Applications are available in the Financial Aid Office. Please send completed application materials to: National Academy for Nuclear Training, Scholarship Review Committee, P.O. Box 6302, Princeton, NJ 08541-6302. Entries must be submitted to the National Academy for Nuclear Training by February 1, 2001.

* Green Hills Software annually awards merit-based scholarships and fellowships to Caltech undergraduates who have demonstrated ability and special aptitude in computer science. The award for the junior year consists of a \$2,500 scholarship. The award for the senior year may consist of either a \$2,500 or \$5,000 scholarship. In addition, one or two applicants are invited to become Green Hills Fellows. Applicants should be second term sophomores with a GPA of 3.2 or higher. The selection criteria include programming ability, academic performance, and faculty and peer recommendations. To apply, applicants must submit an application form, current academic transcript, and three letters of recommendation, preferably from faculty or employers familiar with the student's work. Applications are available in the Financial Aid Office. Entries must be submitted to the Financial Aid Office by October 20, 2000.

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.

THE CALIFORNIA TECH

Caltech 40-58
Pasadena, CA 91126