

Check the Tech website for exclusive online updates on the San Diego fires and the Palomar telescope: tech.caltech.edu

Fires “surreal” for students from San Diego

Many close to losing homes in fires; families evacuated with valuables

BY MARISSA CEVALLOS

As fires raged in southern California early last week, dozens of native San Diegans on the Caltech campus were glued to news stations and computer screens, watching the fire inch closer and closer to their homes.

For senior Cindy Ko, whose family lives in the hard-hit town Ramona, the experience was nerve-wracking.

“I couldn’t get a hold of my parents on Monday morning,” says Ko, who watched the fire area engulf her street on Google maps as she and her sister desperately called family members for news of their parents.

Her parents were fine—their cell phone batteries had just died—but Cindy says they were luckier than some of her neighbors: a house over and across the street had completely burned to the ground.

Ko’s parents evacuated when the order went out, but the one road that leads out of Ramona was grid-locked for hours. Her parents slept in the Denny’s parking lot that night, and the Qualcomm stadium the next night.

Ko says her parents are back in their house, but the effects of the fire aren’t over. The National



Photo by Alex Mironov

Fires like this one from the Santiago Fire in Orange County dotted the southern California area all last week. More than a dozen Caltech families were on evacuation alert.

Guard was called in to stop the looting.

“My parents snuck back to our house while it was still under evacuation and my mom saw some young men moving stuff out of a garage,” said Ko. “They didn’t look like they lived there and they were moving the boxes very quickly.”

In addition, the water supply

may have been contaminated, according to the Ramona Sentinel, and residents were strongly advised against drinking or bathing in public water.

Safe but surreal

For many Caltech students, whose families live near the coast, the westerly winds stalled

the fire before it ever reached their homes.

For sophomore Dannah Almasco, whose mother, father, and younger sister packed two cars with family pictures and valuables and headed south to her grandfather’s house, the experience was surreal.

“It’s really scary and hard to

believe what is happening especially when I am here just doing sets and going to class just like a normal week at Tech,” says Almasco.

“But I’m glad my family is safe, and I’m just praying that things will get better.”

Applied math professor Niles Pierce desperately read blogs and one-sentence updates on Tuesday as he tried to find whether his family in Fallbrook was safe.

“It’s a sickening feeling to read eyewitness accounts and pleas for information that refer to familiar landmarks like churches and schools as measuring sticks for how far the fire has progressed.” Pierce says people were calling their homes to see if their answering machines were still active.

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Find out the science behind the southern California wildfires from Caltech geologists on page 5

Caltech sells property for big profit

BY VIBHA LALJANI

Caltech recently sold the 13.4-acre former St. Luke Medical Center site in Pasadena to developer DS Ventures, LLC at a “significant profit,” according to Dean Currie, the vice president for business and finance at Caltech.

The 75-year old hospital not only housed a major astronomy project, but also was a popular filming site for major motion pictures like Million Dollar Baby and Meet the Fockers.

Caltech purchased the property in July 2003 to augment research and other related activities. St. Luke, four miles from the Caltech campus, was bought for large-scale stand-alone research projects rather than for teaching purposes.

“The purpose that we bought it

St. Luke’s housed:

- Astronomy group
- Undergraduate storage
- Film crews for major motion pictures

for didn’t work out as expected,” said Currie. “When we bought it, it was a wonderful opportunity.” But as its real estate value increased, so did worries that the building would lie fallow. It became sensible, says Currie, to sell the building and put the profit to-

ward research on campus.

The first occupant of the property was the Thirty Meter Telescope group, which is working on building the world’s largest telescope to peer at stars born just after the Big Bang. The three dozen or so members worked in a renovated St. Luke’s to test the feasibility of building an optical telescope three times larger than the current largest.

But renovating the space was costlier than Caltech research could afford, said Currie, “because of the historic nature of the hospital building.” And it turned out the campus had more potential than previously thought—after Caltech did a master planning

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Condors distinct from its ancestors, says undergrad

BY MOLLY DAVIS

Condors – a type of vulture – have been flying around California for at least 35,000 years. Now, thanks to the recent work of a Caltech undergraduate, scientists are now sure that the modern California condor is a separate species from the condors living at the end of the Pleistocene era, the last of the Earth’s major ice ages.

Valerie Syverson, who presented her findings at the annual Geological Society of America meeting this past weekend, examined hundreds of modern and ancient condor bones to determine if condor size showed any significant change over the 26,000 year re-

cord of condor bones in the Los Angeles La Brea tar pits.

It turns out that even with the massive climate change occurring at the end of the last ice age, condors didn’t experience any size changes. However, upon plotting and analyzing her data, Syverson discovered that there was a significant size difference between the ancient – and now extinct – condors and the modern California condor.

“The ancients are decidedly bigger,” she says; the bones show that the birds were heavier, with longer, narrower skulls and beaks

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‘Iron Woman’ shows what she’s made of in Cancun

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Battle of the ice cream queens

From the Editors

Paper’s success is precarious without a Publications Board

Last week, I argued that the Tech editor position should not be an elected one for two reasons: one inexperienced person could be elected, and the turnover between editors is too chaotic. I said that if the Tech weren’t a subset of ASCIT, then we wouldn’t have to deal with these problems. What I didn’t do was offer an alternative system, which is what I will do this week.

It’s true that a few years ago, our newspaper was unusually bad compared to that of other selective colleges. There was no visible motivation to dramatically revamp the paper. I definitely credit the election of Adam Craig with the beginning of a new Tech, which wouldn’t have happened if the students didn’t voice their opinion in the polls. By the way, I think it’s also fair to mention that not everyone thought Adam Craig’s paper was terrible. Quite a few people told me they enjoyed the paper and even thought it was the best Tech had ever had.

But that dramatically changed the way Caltech looked at the paper. The administration hired an adviser from the LA Times to come in and offer his advice. Having a professional who knows the ropes of journalism kept the quality of the paper on the rise. Before Adam Craig, the paper didn’t have this many resources going into it. Now that people can take the Tech seriously; it’s not the drab piece of gray paper it used to be.

I think it’s important that the school keeps a check on who’s in charge of the paper. There should definitely be a way to take me out of power if I were, for example, to refuse to print anything but

baseball statistics in the Tech, or if I started embezzling the Tech’s money. In fact, there should be a way to take me out immediately.

At many colleges, there’s something called a Publications Board. It is usually composed of students, faculty, and members of the administration who are familiar with the newspapers, magazines, and other publications that are distributed across campus. They know how the newspaper works and they keep a check on how well the editors are running it. This informed body votes on the editor.

I think something similar would be perfect for the Tech. If the paper were to take a nosedive for the worst, they could act quickly to change its course.

I think one of the problems with the old Tech was that no one was held accountable for more than one year if it sucked. A publications board, on the other hand, would have to take the heat of the criticism. Additionally, the publications board would be looking through the staff to find the next editor. The assumption is that the board would hold the students’ interests in high regard, since students would compose the majority of the board.

Having a Publications Board would take the Tech to the next level. Last year, the paper was too much in its infancy to talk about keeping its success around for a long time. Now that we’ve enjoyed over a year of a paper “on the rise,” it’s time the Tech looked into the future to make sure its success isn’t just temporary.

-Marissa Cevallos
Editor-in-Chief

Why Caltech should study up on other schools, and why it won’t be ignored

An East coast perspective can’t hurt

BY CRAIG MONTUORI

Two weeks ago, I wrote about a proposed trip to the East Coast and to Britain to check out other colleges and see the variety of Housing options and student engaging facilities. This week, I’m going to try to answer some questions and concerns I’ve heard regarding the trip.

The main question people have is: What’s the point of this trip? Fair enough.

The point of the trip is not to simply copy the methods and organizations of other institutions. It’s not to travel around the East Coast on the Caltech dollar and accomplish nothing of worth. It’s not to get a false representation of the schools from the PR offices. And it’s certainly not to write up a report only to see it ignored after our return.

The point of the trip is to change Caltech for the better. To help us understand how our recommendations will affect Caltech, we’ll need to have a better understanding of both the good and bad of our current system. Coupled with a good understanding of our own school, the potential of this trip

greatly increases.

For example, Millikan’s vision of ‘being the best in the few things we so choose’ has resulted in students complaining for many decades about the ‘lack of diversity and weak HSS department.’ This isn’t going to change, no matter how many HSS division chairs try to revolutionize the division. Caltech has made its choice about where to allocate its limited pool of resources, and the problems that result are unavoidable.

This trip will increase reflection upon the Caltech system and help the touring group understand how all the pieces of Caltech interact with each other. Subsequently, we can look at these other schools as prototypes and see how ideas can be adapted to Caltech. This is not a trip to say, “Well, these other schools are doing this, so it must be a good idea.”

Some worry that because this trip is student-conceived and student-run, we’re going to ignore the staff that traditionally writes reports on this subject. But, why should we ignore them? They’ve got connections with other schools and the logistical experience necessary to make a trip like

OPINION

President’s Column

Chris Gonzales says the Tech is better because of editor elections

The Tech’s marriage to ASCIT serves two purposes. First of all, ASCIT provides the protection of a nonprofit corporate structure independent from Caltech. Coupling this with ASCIT’s strong belief in freedoms and non-censorship, you have a safe environment where the Tech should feel free to print whatever they find important without fear of strong repercussions.

In return for this protection and the funding that ASCIT provides, the Tech allows ASCIT to print certain things throughout the year. There has been some amount of disagreement this year over how much space ASCIT should get and exactly how ugly of a hodgepodge we can make the election issue, but this arrangement seems mutually beneficial and for the most part everyone is happy.

The main point of contention seems to be the position of Tech editor as an elected position. All other ASCIT publications have their editors appointed by the ASCIT board of directors, but at some point in the past it was decided that having this arrangement for the newspaper would threaten the Tech’s independence. In addition, an election allows for greater direct student control over the direction of the Tech.

This control was exercised during my freshman year when a majority of the student body decided they didn’t like the sloppy reporting, lazy editing, and general ir-

relevance of the Tech. A dissatisfied group of students convinced a student who had never worked on the Tech but who was a brilliant and imaginative writer to run against the Tech’s anointed slate of editors. This was basic-

The only way to help the Tech was to tear it down and start over.

ly a protest vote, a statement that the students wanted the Tech to go into another direction, no matter what that direction is.

One could say that this protest vote caused short-term harm to the Tech, but one could also blame the resignation of the entirety of the Tech staff after the election. The first few articles under the new editorship were basically created by a team of two, the editor and one of the main students backing his election, who poured long hours into trying to make the new Tech work; there is no question that running an entire student newspaper is far beyond the ability of two motivated people, but they gave it a try anyway. They

What’s your take? Is it time for the Tech to split from ASCIT, or is it important to keep the Tech editor an elected position?
Write to tech@caltech.edu with your opinion.



believed they were pushing the Tech back into the right direction, and even if their paper didn’t fit the conventions of student newspapers, I believe that the present state of the Tech has vindicated them and everybody who voted for them.

Today, the Tech is far improved from its state before that election. The articles are more energetic and cover more relevant topics, the slate of writers is much more balanced among the various houses, and there is pride among the student body as to the current state of the Tech. The Tech a few years ago was not a newspaper on the rise; it was on a slow and steady downward path. The only way to help the Tech was to tear it down and start over. The editors over the past few years deserve a lot of credit for this turnaround, but so does the student body. Their vote two and a half years ago was a statement in support of changing the Tech’s direction. I like the path this paper has taken over that time period; therefore, I am in support of the means of arriving at this point, which is the yearly election of Tech editors.

The California Tech

Caltech 40-58, Pasadena, CA 91125
advertising e-mail: business@caltech.edu
editorial e-mail: tech@caltech.edu

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Editor-in-Chief
Marissa Cevallos

Business Managers
Evelyn Chou
Kimberley Ho

Photography Editor
Jonathan Tsai

Layout Editors
Hanna Liu
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Circulation
Matthew Wierman

Adviser
Dr. Gary Libman

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ASCIT Minutes: October 24, 2007

New Excomm announced, dates discussed for donuts

10/24/07

Present:, Chris Gonzales Mike Grinolds, Andrea Dubin, Mike Forte, Mike Woods, Dan Lo, Ekta Bhojwani, Zack Higbee, Patrick Herring, Daryl Coleman

Absent: Angela Zah, Caleb Ng

Guests: Cliff Chang, Michelle Selvans, Craig Montouri

*Funding Requests

-Michelle, the coordinator for Caltech dance troupe, requests \$270 for the club. They didn't apply for ASCIT funding at the correct time due to change in leadership. 40% of their members are undergraduates. The dues are really cheap, \$25 a term. They want to be able to subsidize paying for instructors so students don't have to pay the full price. They have in the past received \$400 for the year, and want to cover the next two terms. Approved. (7-0-0)

-Cliff Chang requests \$100 of multihouse funding for Ricketts and Lloyd for broomball. Approved (7-0-0)

*Donut

-There was a post-launch

meeting yesterday. They are talking about the calendar use, and how to make it easier for clubs to use. The load time for using the directory is too much, so they may be switching away from table format. The plan is to use an auto-complete method instead. The money should get distributed between the people who worked on it soon. Chris brought up that ASCIT documents are hard to find. They are up on the main wiki page, but there is no link on the side bar yet.

*Publications

-The Big T are having some difficulties. Patrick hasn't heard anything from the Little T, but will get in touch with Joe soon.

*Admissions task force

-The admissions task force needs someone else to serve since Maria is abroad. BoD members should suggest possible candidates.

*Interhouse

-All the houses have themes. Mike Raven and safety guys want to meet with the IHC.

*Excomm

-The new ASCIT Excomm will

consist of Matthew Wierman (chair), Gina Gage, Adrienne Stroup, John Feingold, Yang Yang, and Akshay Singal. Vote to approve these people: approved (7-0-0)

*Boxes

-There are currently boxes in entryway of Ricketts that should be moved to the ASCIT Library. The Library is ASCIT's but Spectre is managing it. There were BoC documents in the boxes which have been removed by Mike. The boxes have to be moved out by tonight.

*Honor keys

-Criag looked into the cost of the keys. They are about \$15 for gold plated honor keys. The proposed point systems are on the wiki. The BoD will discuss them next week

*Craig says table tennis is not a sport. Mike Woods says Craig sucks.

*Midnight donuts

-Midnight donuts are normally done on Thursdays. The proposed date for this term is November 15th.

Editor's Note: The last few weeks of ASCIT minutes have not appeared in the Tech for various reasons. They will soon be available online.

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Hospital housed science fiction club books and astronomy group

ST. LUKE'S, FROM PAGE 1

on campus, they discovered a lot of potential sites for buildings. "People understated how important it is to be a part of the campus," said Currie.

DS Ventures, based in Beverly Hills, is a developer of residential, office and retail property. "They'll work with the city of Pasadena to work out the best use of St. Luke," said Currie. "We may participate and use some of the offices."

"The 30 meter telescope and Gurnis' lab in geology, which also used that space, worked out an agreement with the new owner to continue their work there," said

Currie.

St. Luke was also used by students for storage. The Caltech science fiction club, SPECTRE, stored their books at St. Luke's when the South Houses were under renovation.

After Caltech purchased St. Luke, it was used frequently for filming hospital scenes. About 70 productions, including motion pictures like Million Dollar Baby, The Ring Two and Meet the Fockers and TV shows like Judging Amy, Curb Your Enthusiasm, Cold Case and Without a Trace have used the site.

St. Luke was opened in 1933 by the Sisters of St. Joseph of Orange. It was one of the first hospitals at San Gabriel Valley. When

it was constructed, the architecture of the building comprised of a Spanish-style dome. Caltech and past buyers consider it to be a symbol of Pasadena's elegant architecture.

The property has five residential sites, hospital and medical buildings, according to Currie. The main hospital building is seven stories high and spans 74,000 square feet of space. Five wings and annexes that were added over the past 56 years increased the size of the hospital complex by 70,000 square feet. A separate two-story medical office building with 29,504 rentable square feet was built in 1984 and is currently fully occupied.

Student presented condor findings this weekend in Denver at conference

CONDOR, FROM PAGE 1

than the modern condor.

Moreover, the ancient bones look like they might be from the species *Gymnogyps amplus*, which was described from a broken lower leg bone which is bigger than any of the other bones Syverson studied. It would have been an outlier of both of the species Syverson described, which makes her wonder if a third species needs to be defined for the extinct La Brea condor.

Syverson has some evidence that the ancient Pleistocene condor may have lived at the same time as ancient humans. Bones

from the older, bigger species were found in the youngest pit at La Brea; this is also the pit that contains the only human remains in the tar pits – the La Brea woman. Evidence from a collection of condor remains at the Berkeley museum also corroborates with this conclusion: a bone found in Oregon in a Native American garbage heap falls into the size range of the ancient group, and clearly the animal it came from must have lived at the same time as the people who disposed of it.

Syverson's discovery has attracted a fair amount of press at-

tention. She is baffled--according to Syverson, "it's only technically a dinosaur." However, she may attract even more attention if her current project comes through with data supporting her hypothesis about the ancient bones. Syverson plans to use radiocarbon dating in order to determine the ages of the Oregon bone and the *G. amplus* type specimen from the tar pits to see if its age does indeed distinguish a third condor species.



Photo courtesy of Valerie Syverson

The California condor was the subject of senior Valerie Syverson's summer research.

News Briefs

Quantum Hoops will be premiering in Pasadena at the Laemmle "One Colorado" theater on Nov. 2-8. The film went through a minor make-over since it showed last year--David Duchovny, from the X-files, will narrate the film, the famed Rose Bowl prank gets a mention.

Monday October 29, 2007

Clazzical Notes
Ramo Auditorium at 7:00 PM
FREE; no tickets or reservations required
Clazzical Notes, an adult educational outreach program sponsored by The Pasadena Symphony, is a free evening of music and discussion among renowned musicians to bridge the gap that currently exists between the jazz and classical music communities.

Men's Water Polo vs. Whittier, 4:00 PM - 5:00 PM, Braun Athletic Center, pool

Tuesday October 30, 2007

Red Cross Blood Drive, 8:00 AM - 8:15 PM, Winnett lounge
The Red Cross will host a blood drive at Caltech from 8 a.m. to 8:15 p.m. on Tuesday, October 30, and Wednesday, October 31, in Winnett lounge. To schedule an appointment, call 800-GIVE LIFE (800-448-3543) or go to www.GiveLife.org, and enter the sponsor code "Caltech."

Men's Soccer vs. La Sierra, 4:00 PM - 6:00 PM, North Athletic Field
Volleyball Match at Whittier College, 7:30 PM - 9:30 PM, away game

Midterm Examination Period
Dates: Wednesday October 31, 2007 8:00 AM through Tuesday November 6, 2007 5:00 PM

Thursday, November 1, 2007

Volleyball vs. Claremont-Mudd-Scripps, 7:30 PM - 9:30 PM, Braun Gym

Friday, November 2, 2007

Vishten
Beckman Auditorium at 8:00 PM
\$26, \$21, \$16 / \$10 youth
Vishten brings together young Acadians who are passionate about the music and dance of their region in Eastern Canada. In seven years, they have become genuine cultural ambassadors, having experienced success first in Canada then very quickly in the United States, Europe, France, Belgium, the Netherlands, and beyond. They attribute their sound to the richness of their culture and their own experiences.

Caltech Olive Harvest Festival, 8:00 AM - 9:00 PM, Multiple locations - See event detail for more information
Caltech's first annual Olive Harvest Festival is an all-day event that will bring together members of the community to harvest olives from the 130 olive trees on campus. The harvest is in preparation for processing, pressing, and bottling Caltech's very own olive oil. Post-harvest activities at will include dinner, dancing, culinary demonstrations, contests, an "edible tour" of campus, olive-oil tasting, and more. Details: <http://olives.caltech.edu>.





Photo by Bob Thicksten

A fire looms about a mile and a half past the Palomar Observatory in northern San Diego county. Some staff stayed in the observatory as the dome was a “safe haven” from the fire, according to Public Affairs Coordinator Scott Kardel.

Why California burns

Midwestern winds and dry wood perfect for kindling flames, says Caltech geologist

BY SARAH MARZEN

While the current California fires are devastating, their extent is not surprising—after all, autumn is “fire season” in southern California. The winds in California during autumn are drier than in any other season, according to Andy Ingersoll, an atmospheric chemistry professor at Caltech. This helps fires start and spread much more quickly, largely because there is less moisture to

quench the fire, but also because the winds dry out wood and create more fuel for the fire. Drier autumn winds are a result of the winds from the land overpowering the winds from the ocean. Normally, the moist, cold winds from the Pacific Ocean overwhelm the so-called “Santa Ana” or Chinook winds, which are dry winds from a high pressure zone over the midwestern United States. But after a hot summer, a “land breeze” augments the effect of the Chinook winds. This then allows dry continental winds to overpower the cool, moist ocean winds. The mountains that surround Los Angeles have a compounding effect on this situation. Normally, these mountains trap the winds from the Pacific Ocean, allowing pollutants to settle in and create smog. However, gaps between the mountains act as small, narrow passes for the dry continental winds. Additionally, as air travels down the mountain, it warms via a process called “altitude compression”. So as the Chinook winds travel through the mountains, they increase in both temperature and strength. Statistically speaking, “California has one of the better fire safety records in the USA,” says Joe Sheperd, a geology professor at Caltech. “The proximity of people to the forest and the large numbers of people in the Southern California area are very important in forming our perception of the relative hazard of wild fire in Southern California compared to the rest of the country.”

Smoke heavy over campus

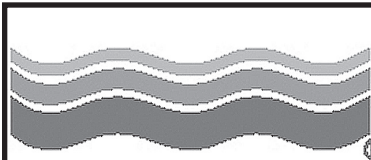
FIRES, FROM PAGE 1

All too familiar

Senior Csilla Felsen says the worst pain her parents had to endure this fire season was “smoky air and chaos,” but this year’s fire isn’t the worst they’ve seen. In the last major fire, her house burned to the ground. “We lost everything,” said Felsen. Sophomore Silas Bennett says the 2003 fire missed his Mira Mesa condo by 100 yards. “I was camping for the weekend with some friends and was east of where the fires started so I wasn’t in any danger,” said Bennett.

Fires in LA

The air was thick and the smell of smoke pungent during the middle of the week on the Caltech campus. The bad weather conditions prompted coaches to cancel outdoor sports practices and games. The Caltech pool closed in the middle of the week and water polo games were rescheduled. The soccer team did not practice. The women’s ultimate frisbee team missed a tournament in Long Beach this weekend because of the fires.



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IRON WOMAN

BY SARAH MARZEN

Waking up at the crack of dawn to avoid the heat for a hard workout. Coming home after work to face the stationary bike because it was too late to cycle outside. Essentially six solid months of disciplined training 2-3 hours a day. What did this all culminate in? Completing over 70 miles of swimming, biking, and running, Caltech junior Becca Barter came away with a solid 101st place finish in a triathlon in Cancun this summer. In this qualifier for the infamous Ironman triathlon, Barter was only one place shy of qualifying for the infamous Ironman World Championship.

Why Cancun? Barter chose this location because it generally has "flat ground and calm and predictable weather." Unfortunately, Cancun was in the midst of a tropical depression when she arrived there. During her race, she biked through three thunderstorms and ran with two pound puddles of water in her running shoes, although the added moisture made running a little bit more pleasant. At some point, she says, "I just wanted to finish the race to get through the pain... I came to finish the race."

Finishing a single triathlon is a pretty amazing feat, but this wasn't Barter's first triathlon. Before, she ran for the Team in Training program, raising \$5500 for the Leukemia and Lymphoma Society. However, this recent race was the longest distance triathlon she had ever participated in—a whop-

ping 1.2 miles of swimming, 56 miles of biking, and 13.1 miles of running.

Barter has decided to take a well-deserved rest from triathlons for a while. "After the triathlon, I couldn't walk properly for two days. My body went into recovery mode.... My muscles were just trying to rebuild," she says, smiling.

In the six months leading up to the triathlon, Barter trained by herself. Occasionally, she used online training programs to guide her workouts, but they generally called for more time than Barter could commit. This was both a plus and a minus, in that she incurred no injuries during triathlon training. Says Barter, "I knew when to say no." (For reference, she got shin splints, a stretched foot tendon, and a sprained ankle from less personalized Caltech cross country workouts.)

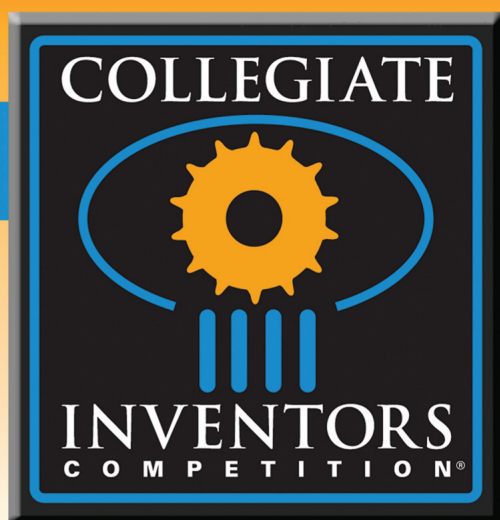
Perhaps it helped that Barter had a strong athletic background even before she started running triathlons. She competed on her high school swim team and cross-country team, rode her bike over mountains in her hometown in Maine, currently runs for Caltech's cross-country team, and occasionally does 30-mile bike rides. So when she started training, she didn't have to train as hard as someone who hadn't touched the treadmill in a few months would have had to.

The cost of participating in this event is more than first meets the eye. Registration alone is \$240, and traveling is costly. Barter's travel and registration expenses were funded, in part, by the

award money from the Don Shepard Essay Contest. The Don Shepard contest award money funds "program[s] of self-enrichment outside of science." Barter's goals fit this description perfectly. "I just wanted to set a non-academic goal and follow it through," says Barter. "I didn't want to use the award money to attend academic conferences in England or the like.... Even if I hadn't won the contest, I would have [followed through on my non-academic goal] regardless."

Clearly, Becca Barter is unusually athletic. She's academically focused, too. Already, she's had four years of genetics-related internships (two of them were SURFs.) Even while training for the triathlon, she was busily researching a fatal mutation in zebrafish brains in the Frasier lab. In her spare time, Barter volunteers for the career development center, and is a model for an upcoming fashion show designed to teach Caltech students how to dress for interviews. She makes time to travel outside of the L.A. smog basin (e.g., to Cancun), to do acrylic painting, and ski. Barter's focus and intensity translates to all facets of her life.

Even with her extraordinarily busy life, Barter balances her academics, extracurriculars, and athletics with a grace and poise that most of us Caltech students wish we had.



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Free to Caltech Students, Faculty and Staff!

**Thursday, November 1, 2007
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**Hosted by Caltech Distinguished Alum
Sandra Tsing Loh,
Writer/Performer and host of radio's
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**Come meet the 11 inspirational finalists of the
2007 Collegiate Inventors Competition
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Donald Keck, Ph.D., co-inventor of Optical Fiber for Communications

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330.849.6906

Pinkberry

VS. 21 CHOICES

21 Choices

Options: Each day, 6 flavors are offered. These range from vanilla to seasonal selections. You can add any of a large number of toppings to customize your yogurt, from candy bars and chocolate to breakfast cereals to cookies to fruit. When it comes to making your yogurt, you're faced with many more than 21 choices!

Everyone's favorite has always been 21 Choices, on the corner of Colorado and Delacey. This summer, a new kid opened up down the block: Pinkberry. So, which one is better, the old standby or the trendy newsmaker?

A

Taste: We ordered pumpkin yogurt with cinnamon and graham crackers (\$5.15) and French vanilla with Reese's peanut butter cups and Kit Kats (\$5.15).

Simply put, the pumpkin yogurt creation was amazing. It tasted exactly like a pumpkin pie that was swirled up and put in a bowl to enjoy, with chunks of graham crackers and a generous helping of cinnamon. Any pumpkin-lover would agree that this is pure heaven.

The French vanilla creation was very creamy and not overpowered by the generous amounts of candy bits throughout. The peanut butter from the Reese's combined with the Kit Kat crunch made this truly delectable.

A+

Service: Despite the long wait, the staff was very energetic and excited to serve the customers. They gave out free samples while we waited.

Each yogurt is handcrafted, and the toppings worked in right in front of your eyes. Once your order is complete, they make sure it's up to par, and if it's not, will remake it for you.

A+

Price: The prices are relatively comparable to Pinkberry, and the small here is

about the same

portion as the medium there. Even though it's a bit expensive, it's worth every penny!

B

Overall Grade: A

Pinkberry

Options: There are two choices of yogurt flavors: original and green tea. As for toppings, there is a fairly wide array, ranging from fresh fruit to breakfast cereal to cookies and chocolate chips. Though there is a variety, it is minimal. There are only so many combinations one can have with two yogurt flavors and 12-15 toppings.

B-

Taste: We ordered green tea yogurt with pomegranate, kiwi, and pineapple (\$5.95) and original yogurt with yogurt chips, cookies and cream, and chocolate chips (\$4.95).

The green tea yogurt was pretty refreshing, but was more liquid than we would have liked; it melted very quickly. Truthfully, we did not taste any green tea flavor in the yogurt. Still, the fruit on top was nice, especially the pomegranate seeds.

The original yogurt was also super-refreshing, and every bite tasted like the first, cleansing our palettes each time. It wasn't very creamy, and was icier than yogurt should be, almost like sherbert. The yogurt chips were interesting, but did not go well with the other toppings. Additionally, the chocolate chips and cookies and cream did not fit well

with the yogurt.

B

Service:

Even though we were a bit confused in the store, no one felt the need to help us out or offer suggestions as to what we

should get. Overall, it felt very aloof (they don't even let you take pictures!).

C

Price: It's definitely the best option to go for the medium yogurt with 3 toppings (which really make the bland yogurt more enjoyable). Still, it's not cheap, but won't break the bank every once in a while.

B

Overall Grade: B



Conclusion: Overall, Pinkberry is a place to go when you're looking for a refreshing treat (definitely get the fruit toppings!). 21 Choices, on the other hand, is more indulgent, and every minute you spend waiting in line is well worth it !

a book review on language.

by mark eichenlaub

For an academic, Steven Pinker makes heavy use of the word “fuck”. Don’t be fooled: in his latest book, Pinker rolls out “bailiwick”, “caliphate”, “expectorate”, “homunculi”, “nudnik”, “polysemy”, “sidereal”, and “zeugma”. That’s in the first chapter. It is, after all, a book on language.

Right now you’re thinking, “Hey, I know what ‘sidereal’ means! I tried to teach it to my mom but she didn’t understand.” Great job, Galileo, but I’m going to ask you to suspend your hard-science rigor for a moment. Steven Pinker is a psychologist.

Language forms the purview of his latest book, *The Stuff of Thought*, and no stone, verb, phonological loop, or sesquipedalianism goes unturned in this Harvard professor’s quest to understand the human mind. “People understand reality independently of the words used to describe it,” Pinker claims. His hope in *The Stuff of Thought*, his fifth book, is to describe that understanding.

“I simply find verbs fascinating,” Pinker admits as if disclosing a guilty pleasure. Fascinating, because verb constructions reveal the implicit thought process underlying our sentences.

For example, we can “give a muffin to a moose,” or “give a moose a muffin.” They seem identical, but Pinker points out that “Give a muffin to a moose means ‘cause a muffin to go to a moose,’ whereas give a moose a muffin means ‘cause a moose to have a muffin’”. If you still don’t believe there’s a difference, consider that it’s perfectly okay to “throw a cat into a room”, but it makes no sense to “throw a room a cat”. You sim-

ply can’t cause a room to possess something. This, Pinker believes, is one small insight into our minds.

After saturating verbs in meaning until they drip all over the cognitive floor, Pinker explores metaphors. “Our power of analogy allows us to apply ancient neural structures to newfound subject matter, to discover hidden laws and systems in nature, and not least, to amplify the expressive power of language itself.”

Not only do we use metaphor to reduce abstract concepts to concrete ones; we also view that concrete reality in many different ways. Consider the difference between “pebbles”, a set of discrete small stones, and “gravel”, which is physically the same set of discrete small stones, transformed into a continuous substance by word choice.

Pinker expounds on why (normal) people don’t think of a CD as a very short cylinder or a strand of hair as a long thin one, why native speakers of the Tzeltal language literally cannot tell right from left, and what it means when a poorly-translated foreign hotel sign reads, “Ladies are asked not to have children in the bar.”

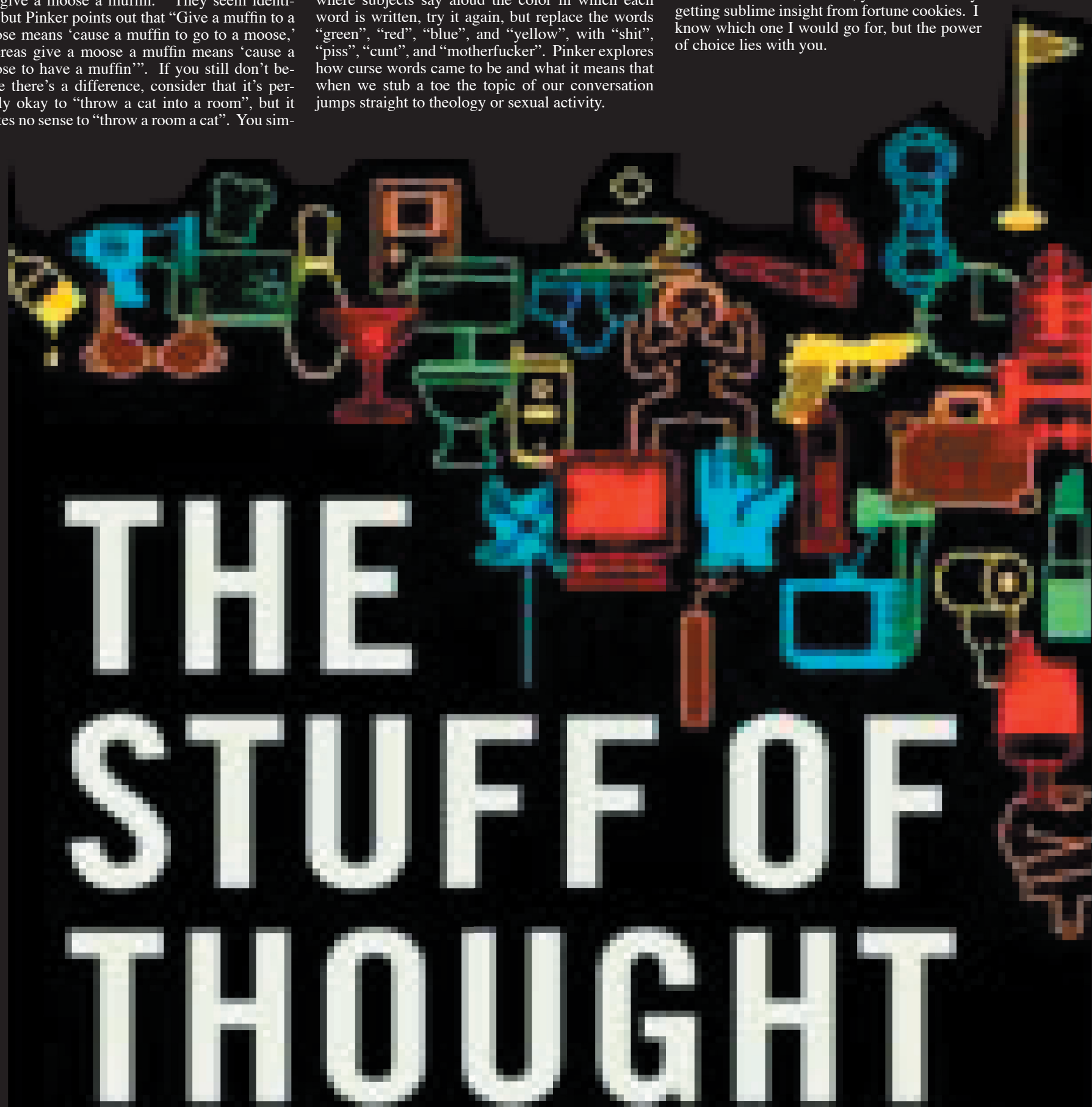
And then, of course, there’s the chapter on profanity. If you think you’re quick at the Stroop test, where subjects say aloud the color in which each word is written, try it again, but replace the words “green”, “red”, “blue”, and “yellow”, with “shit”, “piss”, “cunt”, and “motherfucker”. Pinker explores how curse words came to be and what it means that when we stub a toe the topic of our conversation jumps straight to theology or sexual activity.

I found it difficult at times to swallow Pinker’s claim to be doing science in a field where theories are falsified by general consensus among the researchers, and data comes from asking people, “hey, does this sentence sound retarded to you?”

There are problems with the book, such as its heavy dependence on just one of thousands of human languages (although ample references are made to foreign tongues), and the fact that verbal communication relies on far more than just the words. (Any comedian knows a good joke is in the delivery.) Despite these misgivings, I was wholly won over by both Pinker’s skill as a writer and my fascination with his topic.

Pinker writes with the lucid style of an expert communicator. His arguments are careful and thought-provoking. In a field generally impenetrable to outsiders, *The Stuff of Thought* does a creditable job of introducing the reader to the way linguistics works. And there is no shortage of amusement between the covers. The book is peppered with cartoons and jokes. It also has sex! Lots of sex! In a science book!

“Language offers the clearest window on how we can transcend our cognitive and emotional limitations,” Pinker claims in his final chapter. It would take long hours of careful contemplation to assimilate all the lessons *The Stuff of Thought* has to offer. If that sounds like too much work, you could also try getting sublime insight from fortune cookies. I know which one I would go for, but the power of choice lies with you.





QUANTUM HOOPS.

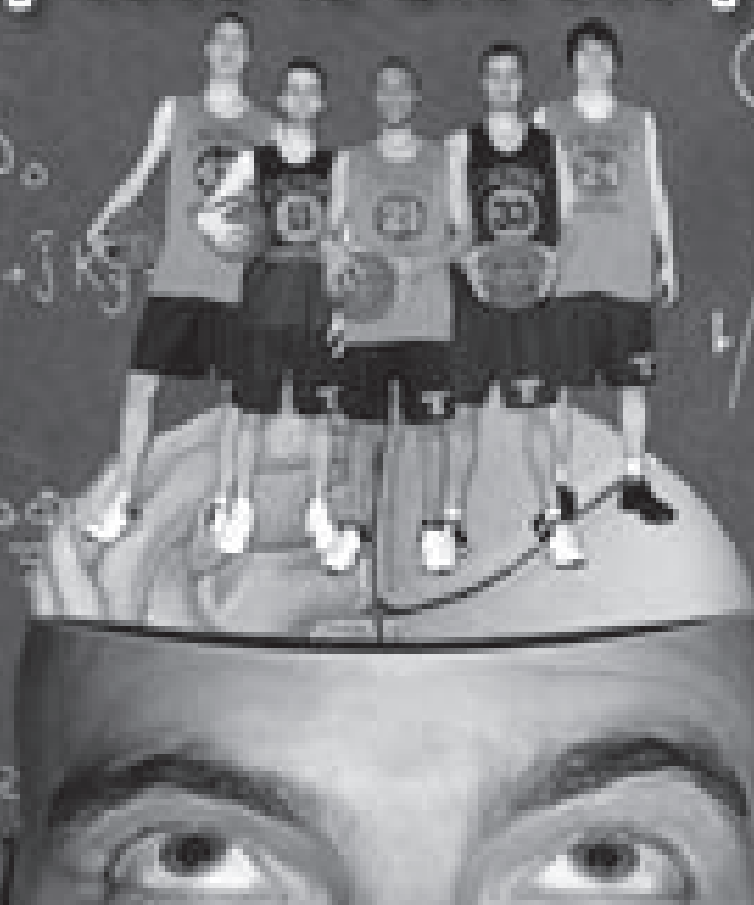
Before they change the world,
they need to win one game.

DIRECTIONAL VELOCITIES

$$\vec{V}_0 = -\vec{K} \cdot \lambda_0 \nabla \phi_0$$
$$= -\lambda_0 \left[\hat{i} K_x \frac{\partial \phi_0}{\partial x} + \hat{j} K_y \frac{\partial \phi_0}{\partial y} \right]$$

$$\vec{V}_w = -\vec{K} \cdot \lambda_w \nabla \phi_w$$
$$= -\lambda_w \left[\hat{i} K_x \frac{\partial \phi_w}{\partial x} + \hat{j} K_y \frac{\partial \phi_w}{\partial y} \right]$$

$$\vec{V}_g = -\vec{K} \cdot \lambda_g \nabla \phi_g$$
$$= -\lambda_g \left[\hat{i} K_x \frac{\partial \phi_g}{\partial x} + \hat{j} K_y \frac{\partial \phi_g}{\partial y} \right]$$



In Theaters Starting
November 2, 2007

Beckman internship: a student loose in Washington, DC

BY CRAIG MONTUORI

I spent my summer in the bowels of the federal government in Washington DC, outside of the ivory towers of a research institution. Yes, this is essentially a “What I did last summer,” essay. Think, though, where does 60% of funding for Caltech research come from? The government, that’s where. Research has been too expensive for anyone but the government, aside from a select few organizations, since the end of World War II, much to Robert Millikan’s displeasure. After all, Millikan was used to a world in which private philanthropist organizations, like today’s Gates Foundation, funded the majority of research. For the most part, the world has moved on, so we have to deal with the government, meaning bureaucratic red tape, political realities, and the other dirty details that exist outside the lab.

Now fast forward twenty years after World War II to a certain famous Chair of the Caltech Board of Trustees. This Chair was also a PhD graduate of Caltech, and he led the fundraising campaign “Science for Mankind” in the 1960s. He organized a meeting between the Board of Trustees and Governor Ronald Reagan, who gave a speech of the same name to the Board in 1967 to protest from the students and faculty. He was involved with promoting politicians through his Lincoln Club. He built the sales of one of his many inventions into a giant corporation. The late Dr. Arnold O. Beckman understood the role of the government in promoting science.

In the 1970s, Dr. Beckman established a fund to promote awareness and understanding of the government for Caltech students, today called the Beckman Political Internship. Since then, this fund has supported one or two students in gaining awareness of political workings from seeing their operations from the inside. I was selected to be a recipient of this fund, which supported my work as an otherwise-unpaid intern on Capitol Hill.

The DC office of Congressman Adam B. Schiff, a Democrat representing the 29th Congressional District of California, including Caltech and JPL, accepted me as an intern. My job involved two primary aspects.

First, the day to day work always needed to get done, which on a good day took up three to four hours. As an intern, my daily job requirements could be loosely put as ‘office support,’ which entailed processing the day’s mail, picking up faxes, folding letters, and other similar activities. These were the sorts of tasks that had to be done to let the rest of the office have the time and space to handle the legislative aspects.

Some letters we received were especially interesting, like the ones from JPL protesting the requirements of a new Homeland Security Presidential Directive. The vast majority were form letters that were entered and registered as for or against various issues. The interns would record tallies of each issue through the Congressional mail program, for and against, and they were likely used as a factor in making a decision on what stand to the Representative would take on certain issues.

The job seemed to be structured



Craig Montuori used the Beckman Political Internship to work in Washington, DC.

such that I was given enough responsibility to keep myself busy during the day, but by coordinating with the other interns and the staff assistant who kept an eye on us, I was allowed to experience many other aspects of the Hill. For example, all staff and interns have opportunities to get certified through the Congressional Research Service (CRS), meaning I could make requests on behalf of constituents. I did this when I was assigned a letter about setting up an independent commission to investigate the failure of New Orleans’ levees when Katrina hit. CRS looked into the legislative background of the issue for me and provided access to several research papers written on the issue.

After finishing up the day-to-day work, especially during the month that Congress was out of session, I was sometimes given constituent mail to respond to. People would send in requests for information about anything from questions about National Archives rate increases to requests for regulations about tank trucks. I was assigned the task of responding to some of these letters, which gave me the chance to investigate many issues that I wouldn’t have even known existed if not for these constituents’ requests.

The second main aspect of the internship was attending events in between finishing my daily work, which was a giant opportunity. When Congress was in session, this meant I going to hearings about a variety of issues. These hearings were organized through Congressional committees at the request of Members, with topics ranging from the International Space Station to diplomatically dealing with Iraq’s neighbors to promoting US service in the UN.

One especially interesting hearing was about US-Russian relationship and the new strains that have been developing recently, and it was hosted by the Senate Foreign Relations Committee. Former national security advisors Brent Scowcroft and Zbigniew Brzezinski testified about the demographic meltdown that Russia is currently going through and other topics. However, the majority of time was spent talk-

ing about the continuing disarmament of former Soviet bloc nuclear weapons and ballistic missiles.

Senator Richard Lugar, along with former Senator Sam Nunn, helped to put together an arrangement between the US and the then-dissolving Soviet Union about how best to secure the latter’s nuclear material and ballistic missiles, called the Nunn-Lugar Program. Sen. Lugar remarked

that he receives reports every day about X number of nuclear weapons being neutralized and Y number of ballistic missiles being disassembled. It’s an interesting thought to realize that some person is keeping track of noting that the numbers of world-busting weapons in existence today is on a decreasing trend.

These hearings and similar ones were going on every day

across Capitol Hill. From them, Members of Congress and their staff learn more about situations around the world and throughout the country. The Members then give speeches and make the news a lot.

However, one important piece of information to note about the federal government is how much work gets done by Congressional staffers. These are the people that do the legwork to make most legislation happen, in consultation with the Member and the office’s Chief of Staff.

For those of you that might be interested in this sort of thing after finishing up grad school, there was an AAAS fellow in the office working on a variety of science-related issues. I’m sure like Dr. Beckman, the AAAS knows that it is in their best interest to encourage scientists to become familiar with the way government works.

Watching the news, it often sounds like the only thing Washington does is be host to politicians pointing fingers at each other and just making a lot of noise. There’s certainly that, but underneath all that, there’s a steady hum of activity going on. Forms still need to be filled, often in triplicate, but it’s an enjoyable experience if you need a break from research and want to stay involved with science. After all, public policy is what drives the funding to let the research you’re doing happen.

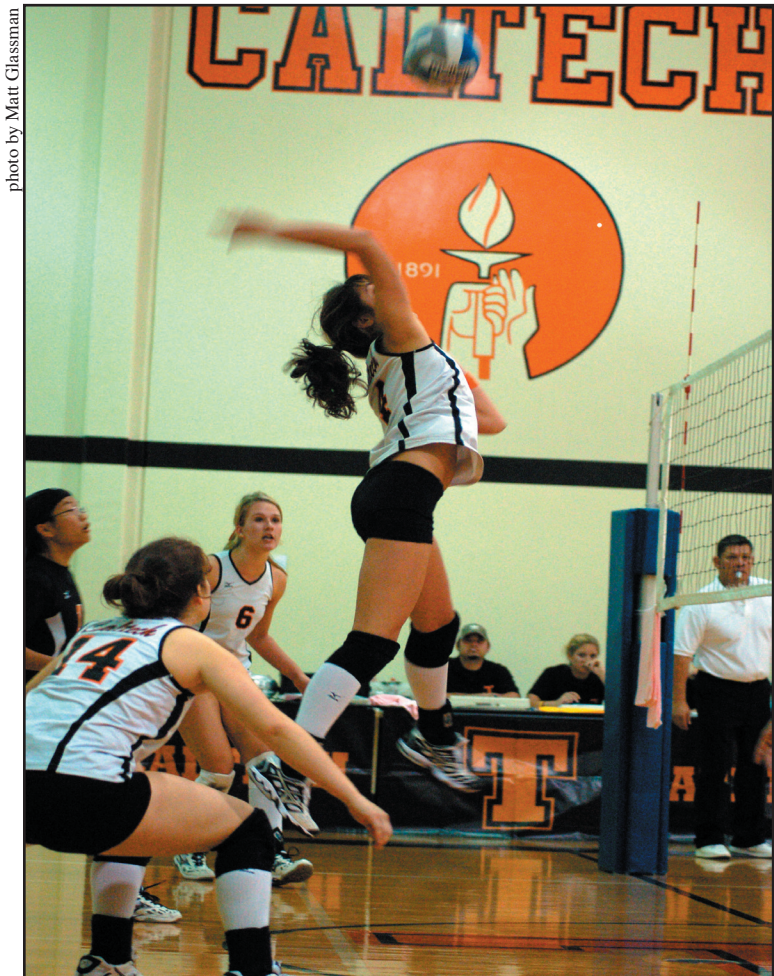


**Write or take pictures
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We’re flexible.

*Join us Monday or Friday
for lunch at Broad Cafe, or
send tech@caltech.edu an
email if you’re interested in
being a part of the Tech.*

Volleyball wins in straight sets



Freshman Sarah Griffis goes up for a kill during the Beavers’ 3-0 home win against West Coast Baptist on Saturday.

BY YANG YANG

Freshman Kathryn Peters stood on the baseline to serve as the Beavers trailed 27-29 to the West Coast Baptist Eagles in the second game. Peters had already missed a serve earlier in the game, Caltech as a team had missed seven already. However, there was no doubt they were going to win.

“Losing wasn’t even an option,” she recalled. “I didn’t even think about missing the serve.”

Instead, the Beavers rallied to take a 30-29 lead. The teams traded the next four points before a controversial call on a Caltech ball hit out of bounds.

A West Coast Baptist defender seemed to have tipped the ball before it had gone out, but the point was awarded to the Eagles. After a rousing protest from the home crowd and the Caltech team, a jump ball was called and Caltech was given the service with the score tied 33-33. The Beavers won the next two points for a 35-33 win.

The second game keyed a 3-0 home win by Caltech on Saturday, in which the favored Beavers won with confident play at decisive times.

A season-high 149 fans watched Caltech dominate the first game 30-16 as West Coast Baptist made mistake after mistake.

A string of seven missed serves in the second game rejuvenated the Eagles offense, they seemed poised to even the match at one game apiece until Peters’ serve.

The still shocked West Coast Baptist team seemed to fall apart in the third game, committing several ball handling errors and hitting returns into the net. With the Beavers leading 23-15, the tide began to turn.

Caltech began making the same errors that plagued the Eagles earlier in the game, letting an eight-point lead evaporate. With the team down 28-27, Peters again came up to serve. The result was no different from the second game. The Beavers again rallied, this time for a 30-28 win. The match ended on an anti-climactic hitting error from West Coast

Baptist.

The Beavers exuded confidence throughout the whole match.

“We came out firing this game, we came out aggressive,” Peters recalled. “We were very excited [and] confident having beaten them already.”

Team captain Sarah Stidham mirrored the sentiment.

“We really wanted to win in three and we did.” She said. “That whole match I felt we were in control.”

Sophomore Lisa Yee led the Beaver offense with 19 kills, Peters followed with 12 while fellow freshman Sarah Griffiths also contributed six.

Freshman Ying-Ying Tran again led the defensive efforts with nine digs. Peters also tied for the team high with nine while Yee contributed six digs in the winning effort.

The team will face Whittier away on Tuesday. Stidham believes it will be Caltech’s best chance at obtaining their first SCIAC win ever.

The Beavers end the season at home Thursday against Claremont-Mudd-Scripps.

Water Polo loses 14-4 to La Verne

BY YANG YANG

The Caltech men’s water polo team lost 14-4 at La Verne on Saturday. Team captain Tom Oliver and freshman Paul Fleiner accounted for all of the Beaver offense with two goals apiece.

Fleiner began the game with two first-quarter goals, including a five-meter penalty shot as the Beavers sprung out to a 2-1 first quarter lead. However, La Verne scored eight unanswered goals in the second quarter to take a 10-2 lead into halftime.

Fleiner attributed the sudden dropoff in performance to the lack of practices – and hence conditioning. Water polo practice was cancelled on Tuesday due to poor air quality stemming from the Southern California fires and Wednesday’s home game against Whittier

was rescheduled for tonight.

“Even without the cancellations, we have trouble with conditioning due to people not showing up or people showing up late,” Fleiner said.

Junior goalie Max Merfeld held La Verne to only four goals in the second half and Oliver chipped in two Caltech goals in the final quarter to complete the scoring.

The young team, which only has 11 years of total experience, will be looking for their first win of the season against Whittier tonight. An extra practice at 10:30 am Sunday was added in preparation.

“We have an exciting game [tonight],” senior Erin Flanagan said. “[Whittier is] the closest match to us in SCIAC. We want a lot of people to show up and support us. It will definitely help us and make a difference.”

Red Sox sweep World Series



Red Sox fans Gaurav Giri (right) and Matthew Wierman watches tensely as the Colorado Rockies try to rally from a 4-1 deficit. The Boston Red Sox ended up clinching game four of the World Series 4-3 to win the title for the second time in four years.

Upcoming Games

Monday, 10/29

4:00PM - Men’s Soccer vs. Pomona-Pitzer
7:00PM - Men’s Water Polo vs. Whittier

Tuesday, 10/30

4:00PM - Men’s Soccer vs. La Sierra
7:30PM - Women’s Volleyball @ Whittier

Wednesday, 10/31

7:00PM - Men’s Water Polo @ Redlands

Thursday, 11/1

7:30PM - Women’s Volleyball vs. CMS

Friday, 11/2

2:00PM - Men’s Soccer vs. Cal State East Bay

Saturday, 11/3

All-Day - M/W Fencing North vs. South
11:00AM - Men’s Soccer vs. Alumni
1:30PM - Men’s Basketball vs. Alumni
4:00PM - Women’s Basketball vs. Alumni
7:00PM - Women’s Volleyball vs. Alumni

Sports and Scores

Women’s Volleyball

10/23 vs. University of La Verne L 3-0
10/26 at Pomona-Pitzer L 3-0
10/27 vs West Coast Baptist W 3-0

Men’s Soccer

10/27 vs CMS L 7-0

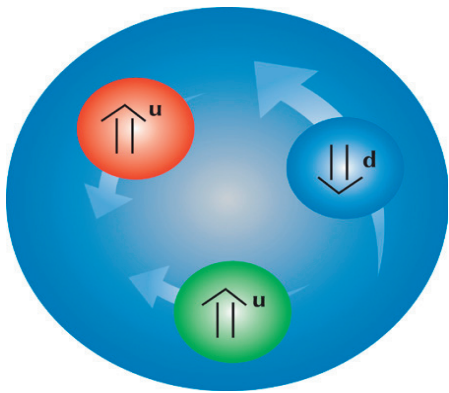
Men’s Water Polo

10/27 at University of La Verne L 14-4

Dr. Quark

Solves your petty problems with Science!

This week: girls and longboards



Dr. Quark,
Recently all my friends became part of the longboarding “craze” and have started buying longboards. Now it feels like everyone has a longboard except for me.

I never get invited to any parties because they’re all longboarding parties. I’ve been holding out because of a prosthetic foot, but I really want to fit in with my friends.

-Sad, Crippled and Depressed

Well Depressed, even though you’re a gimp and probably not very smart, I will give you a piece of wisdom I gleaned from the history books. Although he wasn’t a scientist, if there’s one thing that the life of the Marquis de Sade has taught us is that a life dedicated to wanton debauchery and violent pornography is a life well lived.

I suppose if there was a second thing, it is that fitting into society is important, because while he certainly lived an interesting life, he did spend more than 32 years of it incarcerated for crimes against nature.

Do you want to go down in history as a spineless coward who never had his way, as a gutless, yellow faced pustule? Do you want your grandchildren to remember you as a wuss and a ninny? Or do you want to be remembered as bold, brazen youth, carving and shredding down the streets of LA with the wind in your hair and the sun on your face, living the life, the free and wild life of the one footed bandit?

My good sir, be brave enough to conform! It is only in conformity that we are who we are, or rather who other people want us to be, because the people we

are, are typically not very good people. So take that skydiving class!

Inject yourself with heroin or attend an All-American Reject concert! Stay seated on a couch! These are all things people do to fit in, and they’re things you can do too!

Dear Dr. Quark

My relationship with my girlfriend has been going great. She’s everything I ever wanted in a woman and more...except three nights ago I had a dream. I dreamt that she was helping Winston Churchill to feed me to a giant hamster.

She tied me down, humming “O Canada”, and watched as I was bit by bit devoured. And just before I disappeared into its gullet, she told me “refunds are not available for purchases of \$100 or more.”

Since I had this dream I’ve been terrified to be in a room alone with her.

Am I crazy, or was this some sort of premonition?

From, Maybe Psychic

It’s a little known fact that Isaac Newton, the inventor of calculus was batshit insane. In his latter life he became obsessed with alchemy, which is deplorable, if only because it is antiscience. This is relevant to you, because your girlfriend also sounds crazy, so if she started to invent calculus, STOP HER.

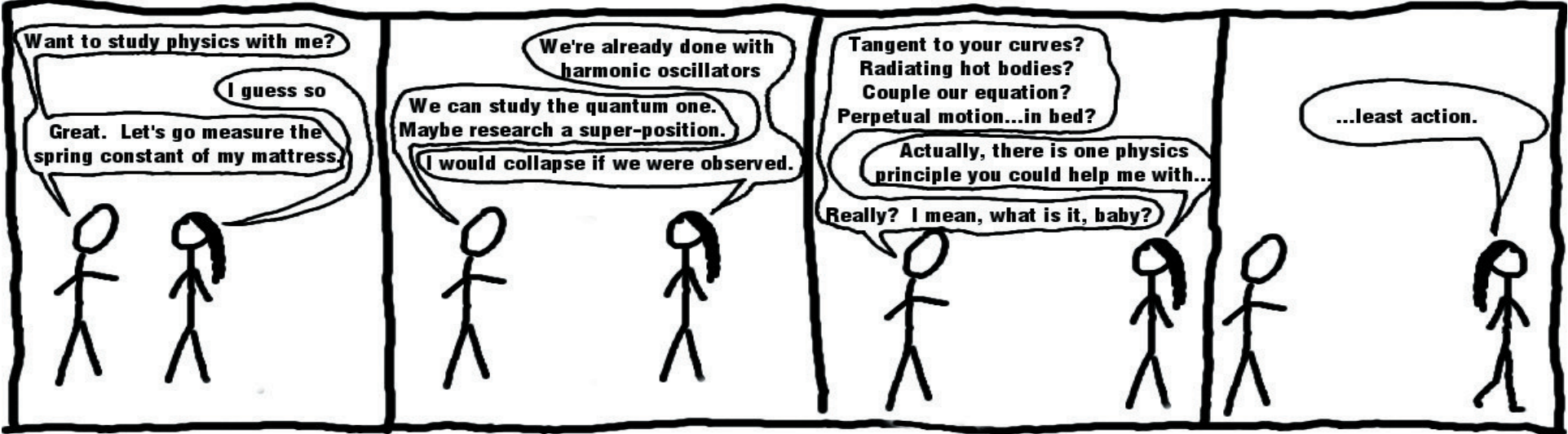
One way you can confront these fears is to act them out in real life with necromantic magicks. Except necromancy is Doctor Frankenstein pseudoscience bullcrap. So why don’t you go with something a little more reliable and peer reviewed, science that is out-

lawed in America due to ethical concerns and banished to Asia.

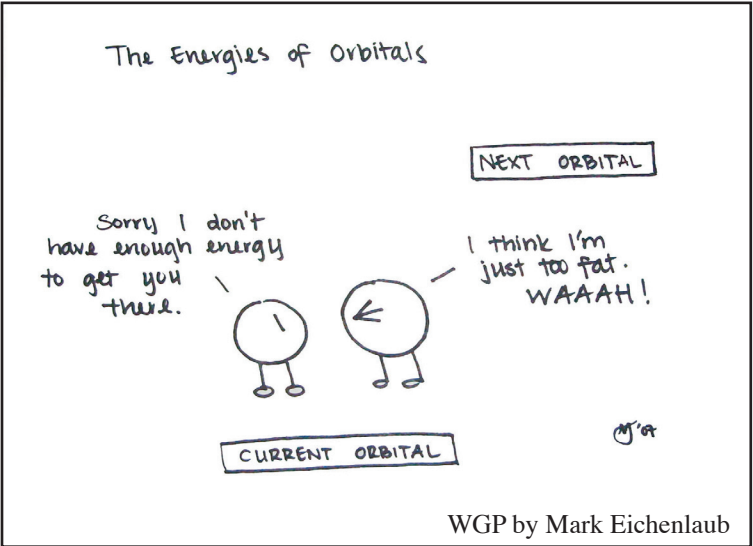
Once you have your method, reanimate Winston and see wherethat takes you. If you begin to feel aroused then you’ll know you’re doing it right. Bring some cigars, and your girlfriend. Winston Churchill smoked fat cigars and loved calling chicks ugly. Or maybe that was the other way around, I can never remember.

These kind of dreams are often indicative of psychosis. I’m not even sure I should be answering your questions anymore you are so dangerous. Are you adopted? You probably are adopted, and this explains why you’re such a nut-job. Who knows, maybe she’ll just break up with you being such a psychotic weirdo.

Comics



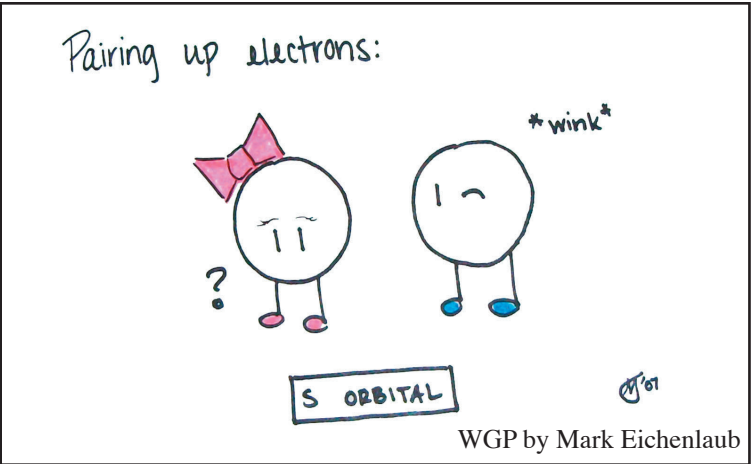
WGP by Mark Eichenlaub



WGP by Mark Eichenlaub



XKCD by Randall Munroe



WGP by Mark Eichenlaub

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