



## Core reform report released *CUE to decide its implementation*

By Sarah Marzen  
Tina Ding  
EDITORS

On December 6, the Core Curriculum Task Force (CCTF) presented their final report on Core reform to the entire faculty board. Immediately thereafter, the CCTF was disbanded.

The process of Core reform, however, is far from over. The Council on Undergraduate Education (CUE), chaired by Vice Provost Melany Hunt, is now saddled with the task of turning the ideas presented by the CCTF into an implementable curriculum by 2012.

Hunt emphasized that CUE was not so much designing a curriculum as it was compiling and balancing suggestions from the various options. “Really what I see CUE doing is helping with discussion,” she said. “CUE has no power to make a curriculum. If the options aren’t engaged, nothing’s going to happen.”

Once the CUE suggests a reformed Core, the Core Curriculum Steering Committee and Curriculum Committee must approve the recommendations. According to faculty board chair Dennis Dougherty, no hard plans are expected before 2012. This

is to ensure that changes can be tested and that information about changes can be properly disseminated to incoming freshman, said Hunt.

Until then, Hunt plans to pilot test certain recommendations from CCTF’s Core proposal as early as next year, including the freshman seminars and algorithms classes.

As of now, it’s not entirely clear what we can expect from the reformed Core. According to Vice President for Academic Affairs and CCTF, CUE, and CCSC alternate student member Karthik Sarma, the CCTF came up with two different Core reform proposals. One was a fully fleshed-out Core with three more units than the current Core, detailed in the CCTF final report. The other was a bare-bones, one-year only Microcore.

“There was not a specific Microcore discussed, but there was a generalized feeling that another option would be to have a one-year Core,” said Sarma, who described Microcore as Core without second-year math and physics requirements, algorithms menu course, or design and build lab. “The expectation is that options would pick up material that was lost.”

CUE will consider both the full-

ly fleshed-out Core and the one-year Microcore as it formulates its own plan for Core reform. “A lot of the faculty support is behind the Microcore and CUE will be very considering of it,” said Sarma.

Both Hunt and Sarma are quick to point out that they are still “very interested in student feedback” and that the new Core proposal is far from being “set in stone.”

The December 2009 CCTF preliminary report laid down several philosophies that should guide Caltech’s Core: depth, breadth, exposure, bonding, and utility of the Core curriculum. CCTF’s reform was also guided by the idea that the new Core should be flexible, leading to no increase in student courseloads or teaching loads. The proposed philosophical changes with clarifications and possible concerns are as follows.

1. Renormalization of requirements across the key sciences
- Under the current core, biologists know a lot of physics and physicists know very little biology. The new core aims to redistribute courses in the key sciences to reduce this disparity and

SEE PAGE 6,  
CORE

## USC students film *Legends of Caltech*

By Gloria Tran  
STAFF WRITER

As some of the Caltech bookstore’s most treasured memorabilia, three volumes of *Legends of Caltech* sit unassumingly on the shelves – chronicles of the school’s grand history of ingenious pranks since the 20’s. At the beginning of this year, several members of the freshman class added the illustrious title of ‘Caltech prankster’ to their résumés. It seems that the unique culture of interesting pranks at Caltech very much lives on.

In fact, this culture, a taste of which was provided by the prank book series, caught the attention of USC alumni, writers Gina Hall, Scott Bridges, and producer, Nikolette Orlandou. They are currently writing and developing a screenplay titled, “*Legends of Caltech*”, a feature film project that documents student life, activities and pranks and how they contribute to the extraordinary Caltech culture.

The film follows the Caltech

career of the fictional Ava, an undergraduate physics major in Dabney House, who wishes to use her talents to “cement herself into the institution’s lore, nay, it’s mythology,” says Bridges. The story also describes Ava’s encounter with two “once-collegial” professors who eventually accept her as their protégé while confronting their own “longstanding philosophic, academic and personal issues”. Bridges classifies the film loosely as a coming-of-age drama, “albeit one with plenty of laughs.”

More importantly, “[The film] is not titled ‘*Stories of Caltech*’ nor ‘*Stuff that Happened*’ at Caltech, but rather, ‘*Legends of Caltech*,’” Bridges summarizes, “[The film] ultimately asks, ‘In an institution chock-full of greatness, what is the stuff of legend?’”

Screenplay co-writers, Hall and Bridges first considered the idea of unique culture at elite tech schools over lunch with their friend Todd Barber, who works at JPL. Barber suggested Caltech and that they look over the *Legends of Caltech* book series. The

pair then contacted the authors of Volume III, alumni Mason Porter ’98 and Autumn Looijen ’99, who introduced Hall and Bridges to current students, staff and other alumni.

While Hall admits that “lasers, popcorn-filled houses and diabolically evil professors [were] fun” in the 1985 movie “*Real Genius*” (which takes place at a technical university loosely based on Caltech), she also believes that the true and treasured stories of attending elite tech schools “hadn’t been done justice”.

To research for this project, the team has interviewed many current students, alums and staff over the past year as well as visited Caltech archives as well as attended school events including House functions. Additionally, people are able to email and have been emailing articles and stories of interest through the official *Legends of Caltech* Facebook page.

“Once we started to interview

SEE PAGE 6,  
LEGENDS



Photo provided by pranksters

The Time Machine sits on top of Baxter Lecture Hall.

## Dr. Who’s time machine moves from MIT to Caltech

By Jonathan Schor  
STAFF WRITER

On the night of January 2, while most Techers were settling back into their houses and preparing for the following day of classes, nine Caltech students and four MIT students were surreptitiously climbing up to the roof of the Baxter Lecture Hall. Once there, they quickly went through previously practiced steps to assemble a five-piece, 600-pound structure, known to Dr. Who fans as the TARDIS.

This past September, MIT students tried to pull off this prank but were stopped by Caltech Security. Now, with the help of Caltech students and administration, this previously unsuccessful prank turned into a successful collaboration.

The TARDIS, or Time And Relative Dimension(s) In Space, is a machine used to transport the BBC television star, Dr. Who, through different points in history. In the cult science fiction TV show, TARDIS was initially able to take any shape in order to blend in with its surroundings. After breaking, it became permanently shaped like a blue British police box from 1950’s England.

Like its television namesake, the TARDIS on the roof of Baxter has done some traveling of its own. It initially began its journey at MIT, where a number of Dr. Who fans decided to perform a “hack,” MIT’s version of pranks, in part due to the highly-anticipated return of the Dr. Who series. They built the TARDIS and installed it first in one loca-

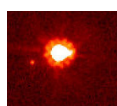
tion, and then moved it to another, on the MIT campus. Given the space-traveling properties of the TARDIS, though, as well as the propensity for Caltech and MIT students to prank each other, the MIT students involved decided to then try to sneak it on to the Caltech campus.

Unfortunately for them, though, their attempt during this past September was unsuccessful. Realizing that there were likely a number of Caltech students who shared their love for Dr. Who, and who would be willing to help out, they got into contact with Caltech’s Prank Club. The idea of collaboration was initially brought up at the Prank Club’s first meeting at Tom Mannion’s house, but it was divvied up to a small group of interested pranksters. Together, the Techers and the MIT students planned how to ship the parts of the TARDIS over, each of which weighed between 100 and 150 pounds. The group agreed that the structure would be brought over via U-Haul, after which MIT and Caltech students alike would work to assemble it at Baxter. In the interim between transporting the pieces and assembling them, the TARDIS would be stored at the house of an MIT student who lived in LA, particularly in her Jacuzzi.

The collection of Techers included Casey Glick, Alex Mouschovias, Elizabeth Decolve-naere, Julie Jester, Jeff Sherman, Christine Fuller, Yuyang Fan, and Alex Wilson. The MIT students’

SEE PAGE 6,  
TARDIS

Mike Brown’s tells the scientific and personal tale of discovering Eris



Page 6

### In This Issue

GRE general test changes  
PCC pranks Harvey-Mudd  
Basketball teams win and lose

Page 2  
Page 2  
Page 7

Library offers Kindles and iPads for checkout

Page 2



# Sherman Fairchild Library to offer Kindles, iPads, and other electronics

By Joel Nikolaus  
STAFF WRITER

With the ASCIT DVD library, computers, and study rooms, Caltech's libraries have long provided more than just a place to check out books. This week the library will add yet another feature to its more traditional offerings when it begins allowing students, staff, and faculty to check out one of the new Kindles, iPads, or flip video cameras.

At present, the number of new devices is relatively small. With Monday's rollout there will be only six Kindles and a handful of the other devices, each of which will be available for checkout from the circulation desk at Sherman Fairchild Library (SFL).

Students are already able to checkout laptops from SFL, but these new devices will be handled differently. Students will be able to take the materials outside of the actual library and for a much longer checkout period, up to three days for the Kindles and 24 hours for all the other devices.

The library sees this as just one

way of staying relevant to students, staff, and faculty.

"The Sherman Fairchild Library was specifically funded with an eye to providing up-to-date services," wrote Kimberly Douglas, the University Librarian, in an email. "As publishers and new vendors experiment with the possibilities that computer and network systems make possible, libraries are also involved in adapting operations and influencing the vendors and publishers on behalf of their constituencies."

Through these new Kindles, students will have access to all the eBooks stored on the Library server, and will also be able to purchase additional books, the first \$25 of which is free of charge, similar to the way the library once handled printing costs. New materials are added to the Library's collection and are then available across all of the devices.

Additional purchases can be charged to the students UID or submitted to the library for approval if deemed relevant. At the present time, there is not yet a plan for such support for the iPads and the purchase of various apps.

As with any new equipment,

students can also expect some new regulations, including a more tightly enforced return policy in a way that contrasts sharply with forgiving policy enforced for most other materials. Since the equipment is expensive, within a day of failing to return equipment or heeding a warning, students can

The library sees this as just one way of staying relevant to students, staff, and faculty.

expect to be charged the full price of the Kindle or other device.

The Kindles, probably the cheapest of the new devices, each run at around \$140. This offers a strong incentive for patrons to return materials according to schedule and is something that the library intends to make students well aware of before checking these materials out.

Though theft or lost devices is not a major concern, Kindles would need to be reset before they were usable, and iPads are

equipped with a GPS that facilitates tracking lost material.

If this trial meets with success, students can eventually expect additional materials and checkout sites at Millikan as well. In the following weeks the Library already plans to also release Nooks (another eReader), a camera, and new laptops. All of these would operate along the same general guidelines, including the stricter return policy.

"This is best done in an iterative, incremental, and participative manner to discover what works, what doesn't, what's useful, what's needed all the while recognizing that change continues," wrote Douglas. "Another way to think of the trial is as a beta release... Failure is not really a concern though such would be the case if Kindles are checked-out and never returned. But our experience over the years at Caltech leads us to believe that won't happen here."

The student sitters were trained on checking out these materials at the end of this last week in preparation for the release this Monday. Most of the librarians seemed optimistic about the new materials.

"We are excited about offering this trial service," wrote David McCaslin, the Library's Access & Fulfillment Services Manager, in an email. "I have been observing and consulting with other institutions such as Princeton and Duke Universities who have had similar services with respect to circulating Kindles."

The Kindle and Nook are both eReaders currently offered by Amazon and Barnes and Noble respectively. Both can display from a vast variety of different eBooks, and instead of the traditional LCD screen, they make use of a passive eInk that is offers a reading experience much more similar to that of a traditional book. They operate on a charge that can last well over the duration of the checkout period.

The Flip video camera is a small, relatively inexpensive, video camera offered by Cisco.

Finally, for those who really live under a rock, the iPad is a tablet offered by Apple, capable of many of the functions of a traditional computer. It has a touch screen and is similar to a large iPhone.

## The California Tech

Caltech 40-58, Pasadena, CA 91125  
advertising e-mail: [business@caltech.edu](mailto:business@caltech.edu)  
editorial e-mail: [tech@caltech.edu](mailto:tech@caltech.edu)

Editor-in-Chief  
Tina Ding

Copy Editor  
Sarah Marzen

Layout Editor  
Hanna Liu

Sports Editor  
Amol Kamat

Business Manager  
Jenny Yung

### Staff

Deboki Chakravarti  
Sandhya Chandrasekaran  
Yang Hu  
Casey Jao  
Rebecca Lawler  
Monorina Mukhopadhyay  
Joel Nikolaus  
Pradeep Ramesh  
Neha Samdaria  
Jonathan Schor  
Stanford Schor  
Gloria Tran  
James Wu  
Vivian Yang  
Wesley Yu  
Chris Zheng

Circulation  
Arjun Ravikummar

Advisor  
Tom Mannion

*The Tech* is 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 submissions are welcome; e-mail submissions to [tech@caltech.edu](mailto:tech@caltech.edu) as plain-text attachments, including the author's name, by Friday of the week before publication. *The Tech* does accept anonymous contributions. The editors reserve the right to edit and abridge all submissions for any reason. All written work remains property of its author.

The advertising deadline is 5 PM Friday; all advertising should be submitted electronically or as camera-ready art, but *The Tech* can also do simple typesetting and arrangement. All advertising inquiries should be directed to the business manager at [business@caltech.edu](mailto:business@caltech.edu). For subscription information, please send mail to "Subscriptions."

## GRE 2011 changes

By Yang Hu  
STAFF WRITER

The GRE (Graduate Record Exam) has been the standard graduate school admissions test for the past six decades. The creators of the test, Educational Testing Services (ETS), made several major changes, which will become effective on August 1, 2011.

Some of the general changes to the GRE are as follows:

The current GRE is a computer-adaptive test, meaning that the difficulty of each question hinges on whether you got the previous question right. This also means that the question is scored immediately after answering it. The new GRE is a multi-stage test, meaning that the difficulty of the test changes based on your performance on an entire section of questions.

ETS claims that the new test will take on a more user friendly design. Since questions will be scored on as a section rather than individually, test takers will now be given the freedom to modify answers and skip questions within a section. The current GRE does not allow test takers to come back to a question that they have previously answered.

An on-screen calculator will also be available for the math sections, allowing for more complex, questions to be asked. The verbal and writing sections will also be revamped with new types of questions "featuring real-life scenarios that reflect the kind of thinking you'll do in today's demanding graduate and business school programs" as claimed by ETS.

The new GRE will now take four hours, an hour longer than the current GRE.

Test takers are restricted from taking the test as frequently. Cur-

rently, the GRE can be taken once per month. The new GRE can be taken once every sixty days. Taking the GRE well before graduate school application deadlines becomes even more important for those who might want a chance to retake the test.

The new GRE also implements a new scoring scale. Currently, the test is scored on a 200-800 point scale; however, the new test will be scored on a 130-170 point scale. A word of caution for those planning to take the test in August immediately after it comes out: scores are not expected to be released until late November.

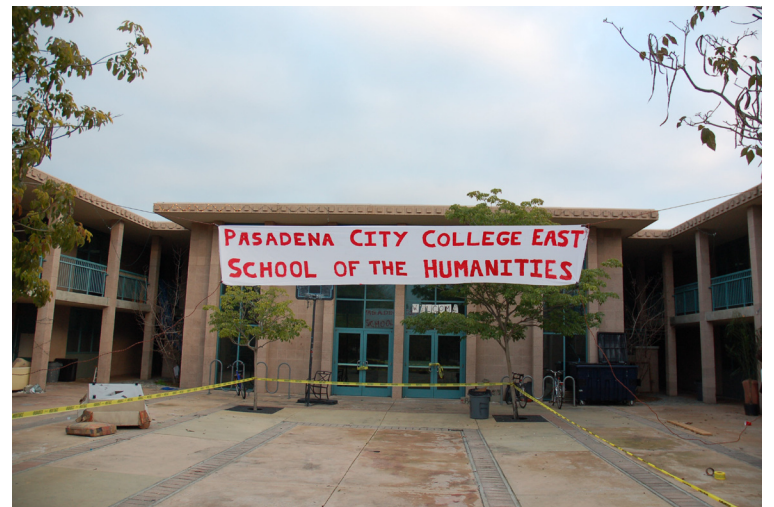
Some major changes to question types are as follows:

Writing: The "issue" essay time limit is reduced by fifteen minutes. Additionally, essay prompts are more focused, which means it will be less practical to predict and prepare responses beforehand.

Verbal Reasoning: Analogies, antonyms, and sentence completion questions have been eliminated and replaced with more critical reading passages. The new GRE will focus more on reading comprehension rather than vocabulary than the current exam. Text completion, sentence equivalence, and strengthening/weakening questions are added to test for vocabulary in context. Some questions will also require the test taker to select multiple correct answers.

Quantitative Reasoning: The test taker will have to provide the correct answer to numeric entry questions instead of bubbling in a multiple choice answer. There will also be more data interpretation questions using graphs and tables. Similar to the verbal reasoning section, some questions will require test taker to select all the correct answers which appear.

## PCC Pranks Harvey Mudd



CLAREMONT, CA - Pasadena City College (PCC) tried to get into the spirited pranking season last weekend with a prank on Harvey Mudd College (HMC). The pranksters raised a 20-foot banner above HMC's main dormitory labeling HMC as a new east campus of PCC. The prank, while well orchestrated, failed because of several logistical issues.

The pranksters involved apparently had not realized that HMC will not start classes until next week. Unfortunately few Mudders saw the banner before it was taken down. Nevertheless, security was notified about the prank and the pranksters were forced to dismantle their banner.

The pranksters were not too discouraged because the entire cost of the prank was just \$21.68 and the banner is reusable. The pranksters are already discussing what other sorts of pranks the banner could be used for in the future.

This prank underscores PCC's continued public interest in breaking in on the pranking scene that has been dominated by Caltech and MIT the past few years. Having gained important experience pranking HMC, the PCC pranksters may be preparing more difficult and impressive pranks for their next target: Caltech.

-contribution by Daniel Erenrich

## Time to pay for your news

By Sandhya Chandrasekaran  
STAFF WRITER

It was about a year ago, last January, that the New York Times announced that it would begin charging for access to its website starting this month.

Money, you say? Blasphemous. But is it really?

In our capitalistic society, we get what we pay for. Take online music downloads for example. Before the Internet explosion a decade ago, music was primarily available on CDs for purchase. You could listen to a few songs on the radio here and there, but if you really wanted a guaranteed source of musical entertainment, you would have to buy the album. However, once music started being available online, actual hard copies of CDs lost loads of revenue, as mp3 files were a lot easier to organize and handle. Not willing to pay the online fees? Then you must either stick to listening to music on the radio, television, YouTube, or find other [legal] sources for downloads. No pay'n, no gain.

However, it is quite obvious that the world of media does not and cannot work that way. The fundamentals of our society stress the importance of general knowl-

edge, and having to pay large amounts of money would just decrease motivation to do so, resulting in a country of duds. Luckily, news radio stations, television channels, and news websites provide several options for this type of education, at a fraction [if that] of the cost of print newspaper subscriptions. As a result, newspapers are slowly losing the little subscription revenue they had coming in the first place, to the point where some of the country's most successful newspaper publishing companies are forced to declare bankruptcy.

Upon this realization, The NY Times started drafting up alternative approaches to securing the funds necessary for the upkeep of their quality paper; while online ads do bring in some green, the recent state of the economy has expedited their plummet. After considering possibilities such as an outright fee upon entering the website and turning itself into a nonprofit organization, the paper decided that it would effect a flat fee for unlimited articles after the user had scanned a threshold number of articles on the website.

Under this approach, those affected the most would be frequent users of the NY Times website, which make sense. These users constitute a large potential rev-

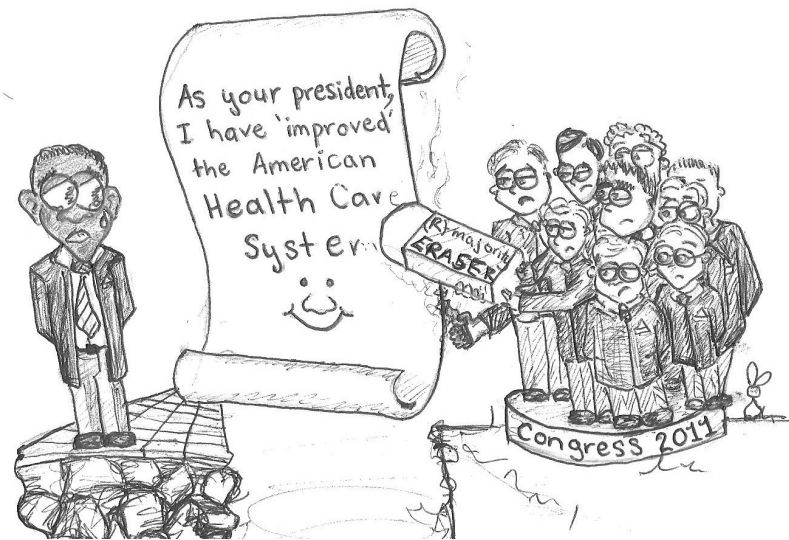
enue loss. In other words, they are getting a significant amount of benefit without contributing to the cause. Making them pay a small fee to access the number of articles they already read would weed out the freeloaders from the true followers, boosting finances in the process.

Some people are arguing that with this course of action, The NY Times is overlooking its audience in an attempt to increase revenue. If this so-called audience is not dedicated enough to pay a minimal access fee, the paper can't really lose what it never had, right?

The NY Times was founded 160 years ago, and has over one hundred Pulitzer Prizes to its name. For a prestigious newspaper such as this one, diminishing quality to compensate for less income is not an option. "There's no prize for getting it quick," said Janet L. Robinson, the company's president and chief executive. "There's more of a prize for getting it right."

Only time will tell whether this tried and true newspaper can stand up tall in the midst of the economic recession's looming shadow.

## New Congress arrives at Capitol Hill



Cartoon by Alexandra Souverneva

# ASCIT

## Minutes

ASCIT Board of Directors Meeting – Minutes  
December 12, 2010

Officers Present: Adam Khan, Addie Rice, Prakriti Gaba, Chris Hallacy, Tim Black

Officers Absent: Karthik Sarma, Brian Merlob  
Call to order: 12:12 pm

### President's report:

- Endowment: Adam met with Anneila, Jenny and Tom to finalize Page house's contact for house endowments on Monday, and is trying to step up similar efforts for the other houses.

### Officer Reports:

- V. P. of Academic Affairs (ARC Chair): Hixon Writing Tutor Program has now been taken over by deans and offers free services to any student seeking writing help.

- V.P. of Nonacademic Affairs (IHC Chair): Tim been talking with Jared about pre-frosh weekend and freshman admissions to see how students feel about other students reading their applications. The IHC will also be send out a Rotation survey to see how students felt about rotation this year.

- Treasurer: Hallacy brought up the idea of getting a power washer for the houses. Big I reimbursements are underway and should be completed early Winter Term. Each party will be reimbursed \$6K and the house treasurers will be in charge of individual party

distribution.

- Social director: Addie encourages students to give ideas for the collegiate collaborative group in which numerous of the top tier universities around the country are involved.

### Discussion:

- Dues: The BoD wishes to increase ASCIT dues by 5 dollars per term in order to cover more of it's own social events instead of relying on other sources for funding. The 5 dollar change accounts for inflation over a period of 7 years.

- Big T: In order to relieve the financial crunch for following years, the BoD

supports a bylaw amendment that creates eight dollar increase in Big T funding.

- Both revisions would incorporate a clause for yearly inflation consideration.

- The Bod recommends the dues amendments that covers yearly dues increases for ASCIT and the Big T (4-0-0)

- The review committee will set the date voting on the amendment

### Scheduling:

- Campus Tour for Director of Alumni Association: at 11am on Dec. 10th by Prakriti Gaba, ASCIT secretary.

Meeting adjourned: 12:41 pm

Submitted by Prakriti Gaba, ASCIT Secretary

## November 2010 ASCIT Bylaw Amendment Proposal Amendment to Article IX

*The following two revisions to the ASCIT bylaws have been proposed by the Board of Directors. The voting will take place from 8:00AM, 17 Jan to 11:59PM, 18 Jan on the ASCIT website. Each revision requires a two-thirds (2/3) majority to pass. Any questions regarding the voting procedure should be directed to the Review Committee Chairman, Brock Jones, reviewchair@dotnut.caltech.edu.*

### Revision of Section 1 Replace:

The Corporation dues shall be payable on registration day of each term at the rate given in the schedule below: Fall: \$25.00 Winter: \$25.00 Spring: \$25.00 Total: \$75.00,

### With:

The Corporation dues shall be payable on registration day of each term at \$30 per term, or \$90 total. The Board of Directors shall reevaluate and update dues each Spring Term to account for inflation.

### Rationale:

Dues have not been increased in 5 years and the rate of inflation prevents ASCIT from funding many activities. Currently, many projects, such as Big Interhouse, the 2 concerts last year, ASCIT

Formal, and Movie Night are largely funded by sources such as Student Life, Housing, the MOSH, etc.

While this has sufficed for the time being, events such as the current economic downturn may prevent these events from occurring in future years, or occurring at the loss of other functions. The BoD believes it is necessary to be as self-sufficient as possible to avoid these risks, without taxing the student population unfairly. Therefore, the BoD wishes to increase dues to compensate for inflation since the last dues increase.

The dues change does not take affect until the start of the 2012-2013 school year. Assuming an inflation rate of 2.6% a year\*, and noting the last dues increase was in 2005, the new dues rate per term is:  $25 * 1.026^7$ , or about \$30.

The BoD also believes passing an amendment every 5 years to account for inflation is not productive, since it causes the Corporation to continually lose money against the economy; instead, the bylaws amendment will allow the BoD to adjust dues yearly to account for inflation. Any increase in excess of the rate of inflation will require a vote of the entire

corporation.

### Revision of Section 5 Replace:

Each Corporation member will be assessed thirty-six dollars (\$36) for the Big T, payable on the days of registration at the rate of twelve dollars (\$12) per term.

### With:

Each Corporation member will be assessed \$60 for the Big T, payable on the days of registration at the rate of \$20 per term. The Board of Directors shall reevaluate and update dues each Spring Term to account for inflation.

### Rationale:

The current assessment of Big T dues cannot support an annual yearbook, due to an increase in publication costs and inflation. This was the main reason that the 2006-2010 yearbooks were combined into one yearbook. The yearbook editors have asked that the assessment be raised to \$60, or \$20 per term. Like the Section 1 revision, the dues shall be updated every year to account for inflation.

\*Approximation of the inflation rate of the past 20 years from the U.S. Department of Labor ([http://www.bls.gov/data/inflation\\_calculator.htm](http://www.bls.gov/data/inflation_calculator.htm))

## Brown tells scientific tale with a personal twist in his book on Pluto's demise

By Mark Eichenlaub

If you read enough pop sci books, you'll learn that black holes ain't so black and that our genes are selfish. Along the way, you'll pick up a few tidbits about the lives and research of Stephen Hawking or Richard Dawkins. If you read enough memoirs by scientists you'll learn that Feynman could crack the safes at Los Alamos (and knew the codes for something else men want to access), or that James Watson didn't use modesty to discover the secret of life. You'll also get a few tidbits about the character of physical law or the structure of the double helix. But if you read Mike Brown's new book, you'll learn that a scientist's work and a scientist's life are separate but inextricable, that the motion of the planets really can affect the path of a life, and that sometimes there is no distinction between teacher and raconteur.

"The amusing thing that I get now," Brown told me about the hate mail he's received since publishing *How I Killed Pluto and Why It Had It Coming*, "are these obscene phone messages." He's smiling as he tells the story. "They sound like drunk fraternity boys who were probably thirteen when Pluto got demoted. They were pissed off then and now they're drunk and pissed off."

Brown, of course, did not kill Pluto. It's still there, and still cold. What he really did was help it.

He found it some friends. "The singular thing for which I am most famous is the discovery of Eris," he said. "It's not the most important thing I've done, scientifically. I don't think there's any question that the discovery of Sedna and this whole story I've been telling you is far and away the most important thing."

Brown has been telling me the story about his discovery of several large Kuiper Belt objects – balls of rock and ice orbiting in slow, frigid ellipses beyond Neptune. Eris and Sedna are among them. Using the nearly-derelict 48-inch Schmidt Telescope at the Palomar observatory, Brown and his teams conducted several surveys of the outer solar system to search for these objects. His first search failed.

His second did not.

They first discovered Quaoar, then Sedna, an object somewhat smaller than Pluto, but scientifically fascinating due to its extremely distant orbit, which separates it gravitationally from the influences of the gas giants. "Sedna never comes close [to the gas giants], and if you integrate the orbit backwards for 4.5 billion years, it never did," Brown explains.

Since Sedna can maintain its orbit unmolested, it serves as the Solar System's time capsule. "It's this window into the earliest Solar System – into the formation of the Solar System. This is what really excites me. I want to understand what the earliest Solar System was like, how it led to what we have today, and what it tells us about the formation of other planetary systems. These objects out there are, I think, the best tools for understanding that that we have."

In other words, Brown wants another story to tell. He's been hitting me with them since I entered his office, leaning in to tell me the good parts, then suddenly swiveling back from his desk, calling up online pictures of the Russian Venera lander's panoramic photos of Venus, and holding them up next to an ultrasound of his daughter for comparison.

*How I Killed Pluto* is a repository of Brown's stories. It recounts his obsessive

data-recording and analysis, not of planetary motion, but of his infant daughter's sleeping and eating schedules. Other anecdotes discuss the way Jupiter and Saturn looked on the epiphanous night when he first understood that the planets really are hanging up there in the sky, or just how

relaxed his post-doc Chad Trujillo was when he announced their first Kuiper Belt discovery, or the gradual evolution from disappointment, to inking mistrust, to deep suspicion as he learned that a particular discovery was perhaps not scooped, but stolen by a team of researchers in Spain. We learn Brown's opinions on the weather near telescopes (nasty), the moon (his nemesis), living in the woods (good deal for a single guy), and, of course, whether Pluto should be

called a planet (definitely not).

"I find that stories draw people in more," Brown says. All the major events in his life – the beginning of his career at Caltech, his courtship and marriage, and the start of his family – occurred during the few years surrounding his search for planets past Pluto. For Brown, the personal context of the search is as important as the scientific context. If the book is about how he killed Pluto, it's necessarily about those personal stories as well. Brown says that even "scientific papers are more compelling and more readable when they have a story that

they're telling. Even if it's a scientific story with data and analysis, it's better if it's a story."

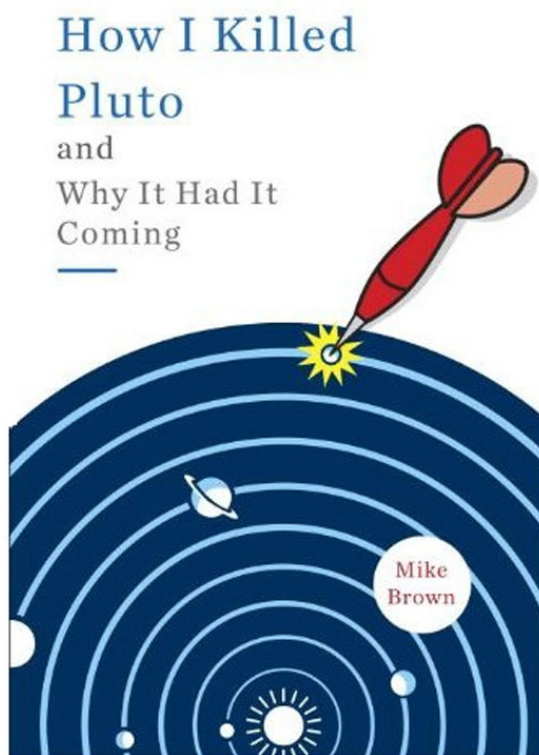
And if ever there has been a great story in need of telling, it's the story of how a ball of gas twirling in deep space collapsed to form the Sun, the planets, and all rest of our Solar System. "It's a huge set of phenomena. If you want to understand the entire Solar System and why it is the way it is, you need to understand details from quantum physics to organic chemistry to hydrodynamics to electrical discharge. I mean, there's so many crazy things that go on that you'll never be able to put all these pieces together in a predictive way and say, 'I know exactly what happened.'"

Brown believes that careful scientific study of Kuiper Belt objects can still help fill in pieces of that story. For example, astronomical evidence from analyzing their orbits is currently giving insight into the mechanism of planet formation and whether the Sun formed in a cluster of other stars.

A story, to Brown, is not just a trick to hold your interest. It's the essence of science, an active process of discovery. He told me that to write about science, "I walk through the whole process of how I think about it, and why I come to that conclusion. I think it's much more interesting to understand the process, in addition to just saying, 'Here's the answer.'"

Brown doubled the number of words he's written, lifetime, in writing *How I Killed Pluto*. The effort will be repaid in full as thousands of people learn how mysterious our Solar System still is. Our understanding continues to evolve, with new evidence like that of Brown's discoveries continually challenging and inspiring our stories about the Solar System. Brown, with his hallmark enthusiasm and joviality, tells me, "We're really starting to be able to not as much rewrite those stories, as write them for the first time."

For complete audio of the interview, see <http://goo.gl/ehLRQ>



## Humor in *Big Bang Theory* loses originality

By Caroline Yu



This season's *Big Bang Theory* features "Shamy", Sheldon and Amy Farrah Fowler (Mayim Bialik)

Smart, awkward and hilarious, Sheldon shone in the *Big Bang Theory*. The trouble is that now, there are two Sheldons: Amy Farrah Fowler, Sheldon's "friend that is a girl, not a girlfriend", is a female and harsher version of Sheldon. Throwing Amy into the already chaotic mix of Penny and the guys tips the balance from quirky to outright weird. With the exception of a few episodes, this season's *Big Bang Theory* is flat and uses much of the same old tired humor.

The *Big Bang Theory* uses stock characters, more caricature than human. For the first couple of seasons, this was ok because the jokes were new. This season, however, the writing is often uncreative and the episodes become disappointingly predictable. Shenanigans like Wolowitz getting caught in a robotic arm and Sheldon adopting a horde of cats seem more like filler material, but get far too much screen time. There are a few highlights this season: The Apology Insufficiency shows a rare glimpse of Shel-

don's human side. Sheldon, an undeniable genius, is clueless when it comes to social interaction. When he accidentally costs Wolowitz a position, Sheldon awkwardly but sincerely tries to apologize, going so far as to offer Wolowitz his seat on the couch. In another episode, *The Hot Troll Deviation*, Bernadette reappears, and her reconciliation with Wolowitz throws him off his usual perverted self as some genuine insecurities come out. Finally, the visit from Sheldon's mother in *The Zazzy Substitution* provides a refreshing change: for once, Sheldon is the one being outsmarted.

Leonard and Raj remain disappointingly flat. Leonard, if anything, becomes more dislikeable. As the character who represents the genius who can't get the girl, Leonard is becoming increasingly desperate. He not only sleeps with Raj's sister, but also abuses his fake relationship with Penny. When Penny's dad comes to visit, Penny begs Leonard to act as her boyfriend

in front of her dad. Leonard jumps at the chance, taking every opportunity to get physical with Penny. Throughout the season, the writers have been dropping hints about Penny and Leonard getting back together, but Leonard's desperate behavior makes any relationship between the two unconvincing. Raj, too, is an on-and-off character. The writers' solution, so far, has been to make Raj drunk for him to interact with any female characters. At first, that was funny, but now it's more exasperating.

All this is not to say that the show was not enjoyable. The characters' ridiculous antics still provide lots of laughs, and Jim Parson continues to shine as Sheldon. The awkward mix of Penny, Amy and the guys has plenty of potential for the show to reach new comedic heights, as long as the writers are creative.

Although the last season lacked "zaz-zles", *The Big Bang Theory* is a hilarious show that deserves its popularity.

## Black Swan, good but disturbing thriller

By Sandhya Chandrasekaran

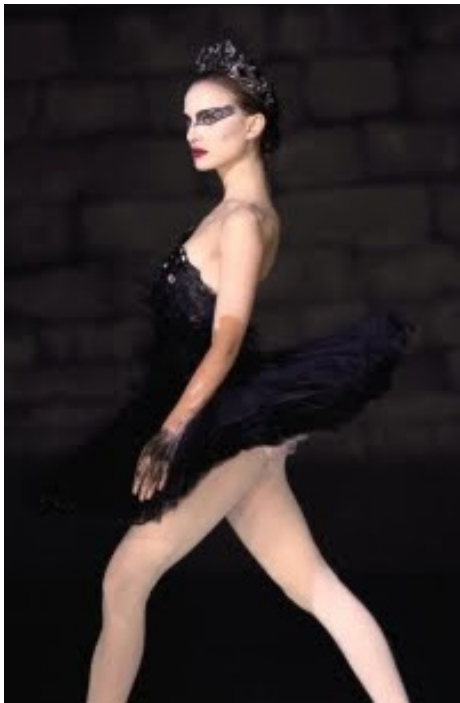


Photo from movietrailer.com

When I went to go watch this movie, I was expecting to let out a few impulsive screams here and there. After all, the advertisements had made it seem like the traditional freaky monster horror film, except with some familiar talents. Thankfully, for my fellow moviegoers, I let out no such shrieks; however, I did leave the theater more disturbed than I had imagined.

Director Darren Aronofsky combines dance, movement, violence, animal imagery, and color symbolism in this psychological thriller. He constantly keeps movie watchers on their feet with his subtle overlap of the real world and Nina's convoluted mind. Just when we start to slowly sink back into our comfort zone, he inserts an element that catches us off guard.

Natalie Portman plays Nina Sayers, a determined ballet dancer whose porcelain skin is as flawless as her body movements. The New York dance company's owner sees this in her, and immediately envisions her as the White Swan in his new produc-

tion of Swan Lake, but feels that she is unable to channel her seductive instincts enough to portray the Black Swan. Lily, on the other hand, played by Mila Kunis, is easy-going and free-spirited, naturally channeling her more primal instincts as she glides across the floor. Nina does get the part, but until the production day, must try harder and harder to tap into her more dark and lusty side. As the day draws nearer, we watch as she undergoes self-mutilation, hallucinations, and sexual pleasures, as unsure as she is of whether she is imagining it or living it. Her life submerges deep into a fantasy world, and we enter it with her.

As with several aspects of the movie, I felt like the numerous sexual episodes Nina experiences throughout the film were included in excess, but were tastefully and artistically implemented. It is the overabundance that distinguishes the movie. From the small bristles that grow on Nina in her visions to her red, gleaming, blood-thirsty eyes, Aronofsky attempts to paint a dark, sensual picture of Nina's figura-

tive, and quite literal, transformation into the creature she portrays. Dancing the part consumes every part of her to the point of initiating a mental breakdown.

The viewer wonders whether Nina suffers these neuroses because of the pressures to become the Black Swan, black traditionally representing evil, or because of her total usurpation by the perfectionist White Swan, who while seemingly innocent, stealthily destroys from the inside.

The vision behind the movie is no doubt amazing, the casting brilliant, and the cinematography exquisite. The ideas presented in this film are far from ordinary and will ring in your mind every time you rewatch it.

Don't let the idea of a ballet and swans fool you. This movie will swiftly and unexpectedly prance all over your preconceptions and will leave you thoroughly rattled.

### ADVERTISEMENT

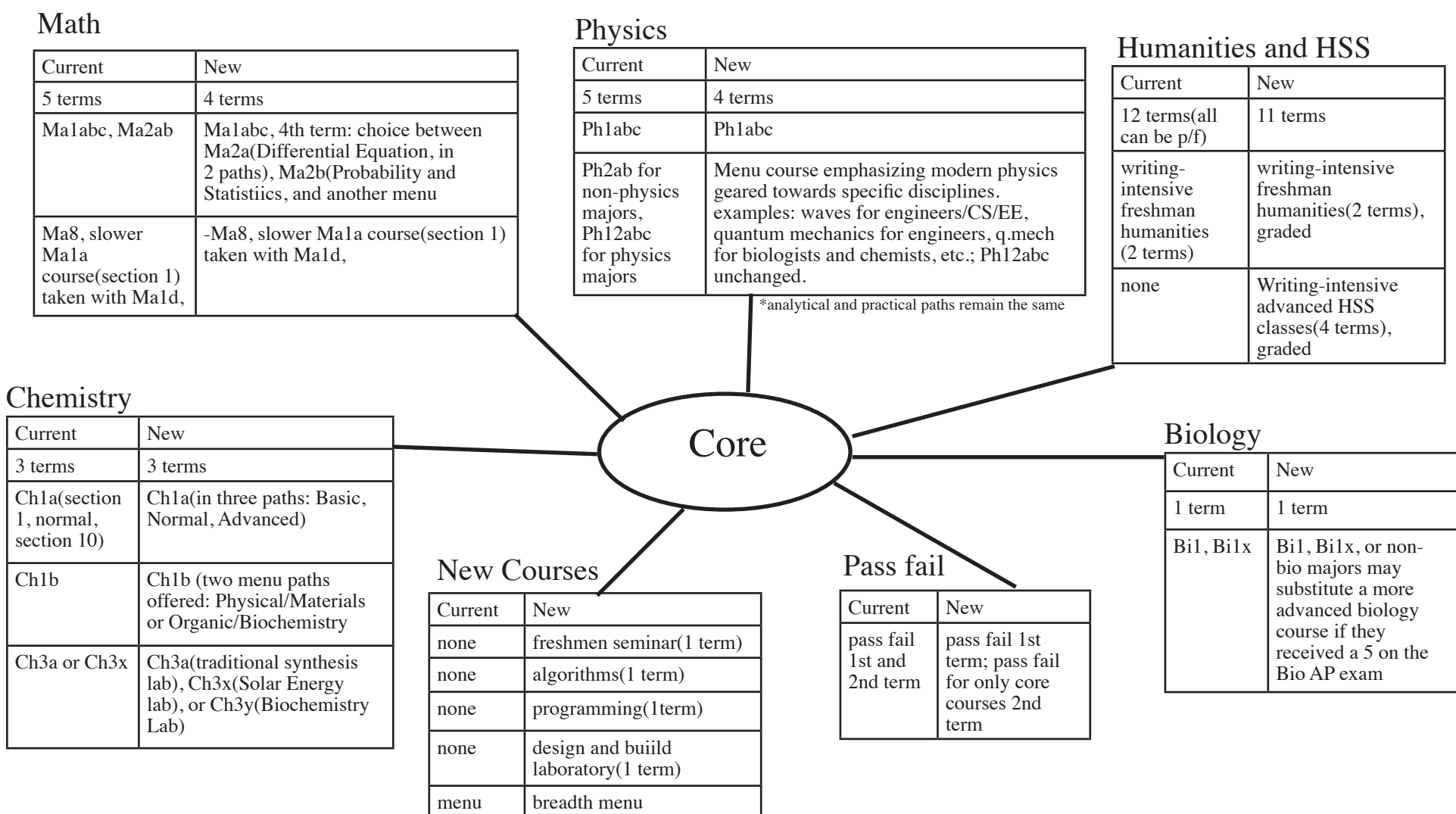
**PITA JUNGLE**  
The art of eating healthy

oh So FRESH

**COMING LATE FEBRUARY!**

PITAJUNGLE.COM | 43 E COLORADO BLVD PASADENA, CA 9105 | SamAshek@gmail.com

Visit Us on **facebook** Follow Us On **twitter**



## CORE

continued from page 1

balance the student's exposure to these topics. However, as addressed in the December 2010 Faculty Board Meeting, the new Core still contains four terms of physics and four terms of math versus one unchanged term of biology. There is a total of 109 units of physics, math, and chemistry versus nine units of biology. Professor Fraser noted at the faculty board meeting that biology such as the Physics of Biology can be learned through menu courses.

### 2. Choices throughout the core

By offering a variety of paths in a certain course that range in focuses and depths, the new Core will allow students with different backgrounds to quasi-customize their path through Core. Accord-

ing to the CCTF final report, the emphasis to allow students to adjust should not be through the pass-fail system, but rather by offering more choices that suit their interests and skill levels.

Some of the new "paths" such as Analytical Physics and Ma8 are already offered in the current core curriculum or exist de facto. For example, the current Ch1 "super-section" is renamed and reunited in the CCTF final report to "Advanced General Chemistry".

### 3. An extensive emphasis on critical writing skills

Students must take six writing-intensive courses in humanities and HSS on grades.

"There is a very large concern among faculty that students' writing skills are not improving and are likely deteriorating," said faculty board chair Dougherty. "We have to do something to make

that better." Among peer institutions, Caltech students enter college with some of the highest SAT writing scores and exit college with some of the weakest GRE writing scores, according to Vice Provost Hunt.

### 4. Early exposure to more faculty in non-lecture settings

Putting the 3:1 faculty student ratio at work, the new Core seeks to introduce courses that are not lecture courses with problem sets, but instead small courses where students have close interaction with faculty. The embodiment of this philosophy is in the new Freshmen Seminar course where "a small group of students interacts directly with a faculty to study a topic of the faculty member's choosing."

It is not clear what exact form these freshmen seminars would take. Roughly forty professors

must teach freshmen seminars if they are to be a part of Core.

### 5. A commitment to improved labs involving data collection & analysis and design & build

The new Core emphasizes the importance of lab classes to simulate problem solving in the real world. "An important part of the proposed core lab experience should be for a student to design something, build it, and make it work," according to the report. Therefore, a design and build lab is a new requirement in the Core proposal, replacing the current Core requirement for an additional freshman lab.

### 6. Exposure to new intellectual frontiers

The emergence of informational and computational approaches to science in the last few decades led to the suggestion of an algo-

rithm course that is now a requirement of the new Core. Professor Niles Pierce, in conjunction with computer science faculty, has designed the new algorithm courses.

### 7. A commitment to innovative courses and excellent teaching

The report addresses the importance of good teaching and the need for yearly assessment of each core course. Furthermore, it supports video-recording courses, saying that it "provides an important source for self-improvement and assessment of the faculty." It also reveals that three previously criticized courses (Ma1a, Ch3a, and CS1) have transformed into oft-praised courses in less than a year due to "evaluation and oversight, together with faculty willing to enact change."

read the faculty board minutes available online for more information

## LEGENDS

continued from page 1

people, take tunnel tours, sit down to house dinners and attend a couple parties, we were hooked into the world. So we started writing," says Hall. "We've had the opportunity to meet a lot of enthusiastic and amazing individuals, so it's been very enjoyable. Every time we talk to someone new it helps us add nuance to our script."

Within this fictional plot, the team hopes to include "as many iconic features of the 'Caltech experience' as will organically figure into the plot," with the intent of sharing with a "clueless world" how the institute's culture shapes the lives of some of the country's greatest minds, comments Bridges. "Our message is one of bold courage, dogged persistence and true friendship. We hope it will inspire but more importantly, we hope it will resonate as honest." The three collaborators also hope that Techers and alumni not only "recognize elements of their collegiate lives [in the film]", but also, "relate to characters who are composites

to some degree or other of students they may know or of whom they've heard."

The film aspires to be an accurate-as-possible documentation of life at Caltech. The writers promise that everything from the dialog, pranks, traditions and the general ups and downs of student life to the set decoration and costume design will be included in the script and film. Though the final product is a feature narrative film, the project will include documentary footage with the goal of introducing the feature film audience to the real-life people and traditions of Caltech and promoting the film. Video interviews with current students and alumni have been shot and will continue to be shot throughout the development of the project, and excerpts may be included on the DVD as a special feature.

The film is anticipated to be between 100 and 110 minutes long. However, the script is currently undergoing rewrites and the search for a director is still underway before the team can pitch the project to studios and financiers.

Producer Orlandou comments that it will be difficult to know when to expect the "finished

product". "A little known fact to the wide public is that most films one watches on the big screen take a minimum of five and sometimes ten years to get there, even when a star cast is involved." When production does begin and they are ready to shoot, the team hopes to be able to film on campus, though it is also hard to say whether Caltech will permit it or not.

Hall and Orlandou are alumni of USC's School of Cinematic Arts, and Bridges received an M.A. from USC's Annenberg School of Journalism. Orlandou has worked in both studio franchises as well as independent film, in projects ranging from Scary Movie to Hurt. Both Hall and Bridges have also been working in the film industry for some time. Hall has written and produced several documentaries and has developed scripted projects for other producers, while Bridges works primarily as a newspaper editor and freelance journalist.

\*\*Anyone who is interested in sharing their stories, photos or video of the real life pranks they have participated in throughout the years, are encouraged to reach out to either Gina, Scott or Niko-

lette via the Facebook page "Legends of Caltech."

## TARDIS

continued from page 1

names have been omitted to preserve their request of anonymity, but they included a senior, a junior, and two MIT alumni, one of whom is attending graduate school at Caltech.

After the prankers were assembled at Tom Mannion's house, they began to practice setting up the TARDIS. Although Mannion had notified security of the prank earlier, the group still wanted to preserve the spirit of pranking, working as fast as possible to get the job done before being detected. And so, at around half-past nine on the day before second term began, they carried the pieces to Baxter Hall and hastily assembled the TARDIS, complete with lights.

Since then, Mouschovias has contacted the BBC to see if they would like to publicize the traveling TARDIS, which will move to another university within the next

few weeks, and is waiting for a reply. Meanwhile, some at Caltech have voiced concerns that Caltech may have assisted MIT in pranking ourselves. To this, both Glick and Mouschovias remain doubtful. As Mouschovias stated, "It's in no way insulting...it's just a cool thing." Added Glick, "We're not losing anything...there are no victims, it's collaborative, and hilarious to anyone who's seen Dr. Who."

As for the question of whether this prank will set a precedent for future MIT-Caltech collaboration, the pair seems unsure but optimistic. Both found the teamwork exceedingly enjoyable, especially showing the MIT students around the campus and interacting with them. The MIT students, in turn, were very impressed with the ability of Techers to perform pranks without being severely reprimanded or, in extreme cases, arrested.

In fact, it seemed that Glick had only one qualm with the overall experience. Stated Glick with a smile, "I asked them to take the Fleming cannon back with them." Much to his chagrin, the MIT students decided against the suggestion.

## Caltech Men's basketball loses heartbreaker

*SCIAC opener a close, sloppy affair*

By Amol Kamat  
SPORTS EDITOR

The Caltech Beavers (4-8, 0-1) opened conference play Saturday night against the Pomona Pitzer Sagehens. The Sagehens (5-7, 1-0) fielded an intimidating team of relatively old looking undergraduates. Honestly, their smallest player could probably swallow me whole and still be hungry. However, if this game proved anything, it is that being big is not a substitute for being terrible at basketball.

The Beavers started slowly, allowing Pomona Pitzer to jump out to an early lead of 13-7. Eventually, the Beavers settled down and took advantage of the Sagehens lackluster shooting, though they continued to allow multiple offensive rebounds per possession. Caltech clawed its way back to a 29-24 lead at the half, eliciting cries of "Comeback City" from a particularly obnoxious fan. A handful of fans also announced their surprise that giant Sagehen, Donald Okpalugo, had yet to trample a Caltech player. Despite the Caltech lead, the teams were essentially dead even,

with neither capitalizing on the others shortcomings. This would change in the second half.

Both teams played a fairly sluggish second half, as the Sagehens shot just 28% from the field. Not to be outdone, the Beavers shot just under 18%, while scoring only 12 points. A 13-2 scoring run by Pomona Pitzer late in the game sealed the Beavers fate, and the Sagehens took the win, 47-41.

Sophomore Mike Edwards led the Beavers with 15 points and was also the only player on either team to make 50% of his shots.

The relatively young Beavers showed promise, despite the loss. Sloppy play cost them big, this time, but they will surely improve as time goes on. There was a lot of hype to live up to, and nerves seemed to get the better of them. Don't count these Beavers out, yet.

## Caltech Women's basketball also loses heartbreaker

*Like Caltech academics, everything seemed to be going well until the final*

By Amol Kamat  
SPORTS EDITOR

At this point, I am tired of writing basketball articles, so this shall be written as a fairy tale. This will not be one of those ridiculous, happily-ever-after Disney fairy tales, though. No, this will be like the fairy tales of old (read: no happy ending).

Once upon a time, at the magical kingdom of Braun in the land of Caltech, a great battle was being waged between the invading Sagehens of Pomona-Pitzer (3-9, 1-0) and the good Beavers of Caltech (0-12, 0-1) who called Braun their home. The valiant Beavers fought hard at the onset of the battle, jumping out to a 12-0 lead. Indeed, it seemed the heroes would surely win the day, but the cunning Sagehens had yet to show their true evil. Knowing they had wooed the Beavers into a false sense of security, they quickly assaulted the brave Sarah Wright with a terrible ankle slaying spell and began a sneaky offensive attack that resulted in the Caltech lead standing at just 5 points by halftime (28-23).

As both sides took refuge and rest, the Jester Beaver entertained the assembled Caltech faithful with frivolities, jigs, and t-shirt giveaways while the peppy pep band played peppy tune after

peppy tune. By the time the half-court-shooting contest had commenced, the Beaver fans had all but forgotten of the looming battle and the storm clouds brewing. But, the Sagehens had not forgotten.

The second half saw the Beavers begin a ferocious spasm of beaver fury as they cried for vengeance for the heinous crimes committed by the Sagehens in the first half. They quickly extended their lead to 10, and for a moment, it seemed all would be well in the kingdom of Braun.

But, hope, it seems, fades far too quickly in the land of Tech, for the Sagehens had summoned their allies, the Three Evil Witches of Turnovers, Fouls, and Terrible Shooting. As the power of the Witches grew, the skill of the Beavers faded. The waning defenders of Braun held out as long as they could, but, eventually, the Sagehens took the lead, and there was naught that could be done. In the end, the Sagehens emerged victorious.

The assembled Techers lamented their cursed luck as they raised fists of anger and exasperation to the heavens, screaming "why?" and "is it time for pulled pork sandwiches?" And, yay, it was

time for pulled pork sandwiches.

The End

California Institute of Technology  
© Street Characters 2008



## The Win Streak

By Amol Kamat  
SPORTS EDITOR

Unless you have been living under a rock for the past few weeks, you know that the Caltech men's basketball team had itself a nice little win streak during winter break. The first win, against American Sports University, broke a 44 game losing streak. The second win, against Eastern Nazarene College, gave us our first winning streak since 1992. These two wins also gained the team quite a bit of attention. The New York Times put Caltech basketball on their front page and on the tongue of every rich suburbanite in the nation. After the third win, against UC Santa Cruz, my friends back home were asking me about the team, and they don't even know what the New York Times is.

While Caltech has yet to win a conference game (the losing streak currently sits at 298 and has lasted some 25 years), the wins have certainly had a huge effect on the campus. It has not been uncommon to see an overconfident facebook status or a professor making lame basketball references. However, as energizing as these wins have been for Techers, they must have been incredibly demoralizing for the los-

ing teams and their fans. I would now like to tell you about those schools and let you decide if they are worthy of our derision.

The University of California, Santa Cruz is a public university of 14,000 undergraduates. Their basketball team, the Banana Slugs, plays in Division III and are currently 5-9. They defeated Caltech 79-64 on December 2nd during the Redlands Tournament. At the SCIAC classic on December 18th, however, the Beavers won, 63-62. For such a large school, they should be ashamed for losing to Caltech, and are certainly worthy of our jeers.

Eastern Nazarene College is a Christian college of liberal arts and sciences located near Boston. There are about 1,000 undergraduates currently attending the school, so they are comparable in size to Caltech. Their basketball team (nicknamed the Lions) are currently 5-7. Caltech defeated them soundly, 87-53. At first glance, I did not think it was such a big deal that we beat ENC. It is a small, religious school that plays against some pretty bad basketball teams and loses. I thought better of our basketball team than to brag about beating such a beat-

able team. Then I saw that they referred to Caltech as "California Tech" on their website. Nothing makes me angrier than people who have no idea what Caltech is. So, please ridicule them.

American Sports University is a private university in San Bernardino. Well, it's not really a university. It is currently seeking accreditation, but for now, we'll give them the benefit of the doubt. They specialize in degrees pertaining to professionals in sports. That is, they train people in sports coaching, health, management, recreation, modeling, and special education. There are 130 students. ASU was created by Harry Hwang, a Korean business man who owns a defunct casino and was recently charged with attempting to bribe the mayor of Huntington Park to vote favorably on entertainment development. What I am trying to say is, this school is kind of sad. I do not mean to depreciate the value of Caltech's first win in 45 games. I just really wish it had come against another team.



The men's basketball team does something basketball. They've been doing that a lot, recently.

## CHUCKY-MAKE-A-JOKAH

From the brilliant minds that fell down the stairs in Lloyd and built a blanket fort in Fleming comes a new series for the Humor section: Chucky-Make-A-Jokah. In this section, you will be entertained with the finest of jokes and a Kanye West tweet. Please enjoy.

A pure mathematician awakes one night to find his living room ablaze. You can imagine this is particularly troublesome, as he is a pure mathematician and probably works from home. He quickly makes for the kitchen tossing papers, proofs, and pastries aside (man's gotta eat). Peering into the kitchen, he sees his sink and a large, empty bucket sitting on the fine granite counter. The Mathematician quickly buttons up his nightgown, which has fallen open in all the ruckus and heads for bed. As his head hits the pillow, the Mathematician breathes a sigh of relief: "Ah, a solution exists."

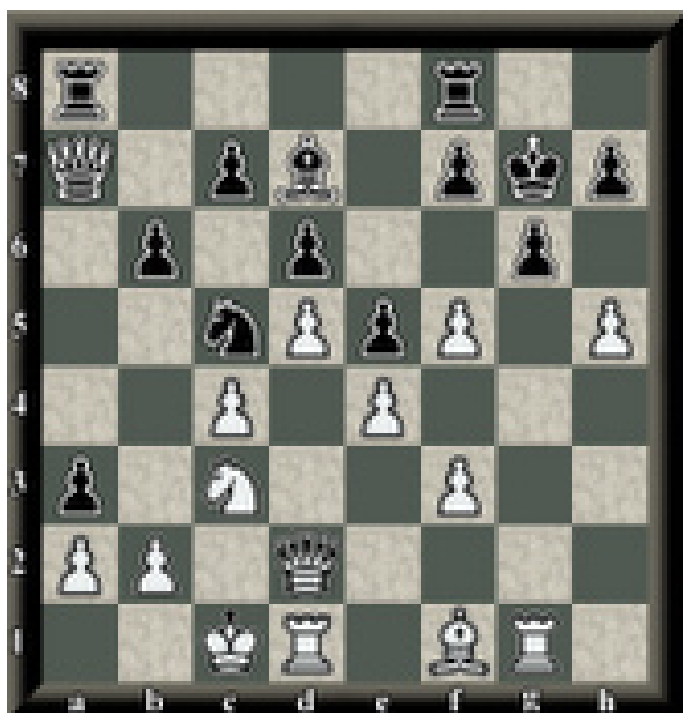
...And now, for a Kanye West Tweet

"I hate when I'm on a flight and I wake up with a water bottle next to me like oh great now I gotta be responsible for this water bottle."

### APPLES AND ORANGES



### Chess Club Problem of the Week



White to play and Mate in 6.

1. Qg2 Kf7 2. Rh7 Rh5 3. Rd7 Qe3 4. Rd4 Qxd4 5. Qg3# - If you found 3. Rd5, which saves Black from checkmate but not from losing claim your prize at the next meeting!

The California  
Tech  
Caltech 40-58  
Pasadena, CA 91125