



Music Groups Perform at Intercollegiate Festivals

Fluid Dynamics and Out of Context

By Rick Paul
STAFF WRITER

Approximately two hundred people packed in to Dabney Hall on the Caltech campus last Saturday to listen to live a cappella performances of over two dozen hits celebrating (and denigrating) love in all its varied guises. Some of the performances included Kelly Clarkson's "My Life Would Suck Without You", Duffy's "Mercy", and a mashup of Taylor Swift's "Love Story". Emcees, Shyam Srinivasan and Kenzie Day, entertained the audience between performances with their back and forth banter on the nature of love. The concert drew a diverse audience from couples in their sixties to college students in their twenties.

Caltech's own Fluid Dynamics and Out of Context hosted the festival, which is in its thirteenth year. The student-run music festival was begun by Out of Context(OoC) in 1997,

but has in recent years been a joint project of OoC and Fluid Dynamics. Seven groups from four different schools in the area attended the concert. In addition to OoC and FD, the other groups included the Shades and Aca-sola from Claremont, VPR and Midnight Echo from California State University Northridge, and the Trojan Men from USC. Andy Matuschak, the director of Fluid Dynamics, observed that attendance at a cappella events has steadily increased over the past few years due to the efforts of both OoC and FD to raise the profile of a cappella on campus. "We [Fluid Dynamics] have been holding short impromptu concerts once a month to appeal to those students on campus who don't necessarily feel like sitting through a two hour concert."

Although a number of the sixteen students in FD have been singing their entire lives, there is also a fair share who began singing once they came to Caltech. "It is exciting to see singers with such a diversity of backgrounds work together to make great music," said Matuschak. The highlight of the event for

sophomore Timothy Wu of FD was singing "Accidentally in Love" by the Counting Crows for which he recently won the best soloist award at USC's a cappella festival, Absolut. OoC also competed at the International Championship of A Cappella (ICCA), a prestigious event in the world of intercollegiate a cappella. Although they did not win the competition, OoC members enjoyed the opportunity to learn from some of the top groups in collegiate a cappella.

Glee Club

By Yang Hu
STAFF WRITER

On Saturday, February 27, Caltech Glee Club directed by Nancy Sulahian traveled to Cal Lutheran University to participate in the annual Pacific Southwest Intercollegiate Choral Association (PSICA) festival. Twelve universities was a part of this event, including Occidental, USC, CLU, Pomona, Loyola Marymount, and a handful of Cal State colleges. Twenty nine members attended the Master



Photo by Jonathan Tsai

Caltech's a cappella group Fluid Dynamics performs at the Love Sucks concert last Saturday.

Class taught by Richard Sparks, a Professor of Music at the University of North Texas and adjudicator of the festival. The Master Class consisted of a lesson given by Dr. Sparks to an ad hoc assortment of singers from these colleges followed by a rehearsal of a choral piece by the diverse group.

Several hundred people ranging from college students to elderly adults attended the festival. Almost all 70 members of Caltech's Glee Club participated. By tradition, numbers were picked out of a hat. Member Jennifer Greco drew the number for Caltech Glee Club, which performed fifth. While festival attendees were obliged to sit on chapel benches

and listen to every choir's performance, (an ordeal which lasted around three hours) everyone was happy to attend.

Caltech Glee Club performed Christian Choral pieces and the well-known classic, "Shenandoah". Dr. Sparks commented favorably about Caltech Glee Club, citing strengths to be the choir's commitment, focus, and energy and tuning to be an area to be an area to improve on. To address this issue, the choir hopes to find a better practice room and sound equipment available at other universities, but lacking at Caltech.

Please see **MUSIC FESTIVALS**, Page 6

Stephen Hawking Lecture Cancelled for 2010

By Perrin Considine
STAFF WRITER

Stephen Hawking's annual physics lecture at Caltech has been cancelled this year, due to illness.

Hawking, a world-famous physicist, spends most of the year working in Cambridge, England, but he is also Caltech's Sherman Fairchild Distinguished Scholar. He pays a trip to Caltech every year to give lectures on-campus in Beckman and Ramo Auditoriums, and off-campus at the Pasadena Convention Center.

Hawking, 68, was scheduled to give a Jan 21 lecture at Caltech, but according to his friend and colleague Kip Thorne, who corresponded with The Tech via email, "[Hawking] contracted a chest infection in December, and on the advice of his doctors he cancelled his January visit, though he was well enough to continue going into the office regularly and continue his work."

There was talk of rescheduling Hawking's visit to March, but Hawking emailed Thorne, telling him that it was impossible. Hawking wrote, "I hope however that you will invite me again next year and this time I will be able to come."

Stephen Hawking, is renown throughout the world for his contributions to physics. He focuses on space, time, black holes, and gravity. Hawking has also published a number of best-seller books about the universe, including A Brief History of Time.

His many discoveries have been made while under an almost full-body paralysis which onset at age 25, caused by amyotrophic lateral sclerosis (ALS).

Hawking has composed his Caltech lectures using a computer (made for him by Intel), which allows him to use his cheek muscles to select and string together words, and speak them for him with an automated voice. He is expected to continue his lectures at Caltech next year.

Undergraduates Win \$51,000 For Patentable Ideas

By Sarah Marzen
STAFF WRITER

Last month, junior Casey Glick won first place in Caltech's first Intellectual Ventures competition for his microrheotronic universal logic gate, netting a cool \$35,000 dollars in the process.

Three other undergraduates also won thousands of dollars for their inventions: junior Daniel Erenrich won second place and \$10,000 for his new captcha design; senior Tamas Szalay won third place and \$5,000 for his multi-touch eye-tracking interface between humans and computers; and junior Cole Hershowitz won fourth place and \$1,000 for his small-scale "micro-grid" that could provide power more cheaply and efficiently to the rural developing world.

"We [the competition judges and organizers] were really impressed," said Karin Edmonds, Caltech's Director for Technology Transfer and organizer of the Intellectual Ventures competition. "Intellectual Ventures appreciated the amazing undergraduate presentations... and the undergraduates didn't even have a dry run for their presentations."

Caltech's Technology transfer office also filed provisional pat-

ents for every student that entered the Intellectual Ventures competition, granting each student a low-cost, year-long period intellectual property protection.

This year's Intellectual Ventures competition may be the first and last such contest, given that Intellectual Ventures had to dish out \$51,000 for student ideas that may or may not be patentable. "I think they [Intellectual Ventures] were happy with the results... but it's expensive and the economy isn't great," said Edmonds.

If any of the undergraduate ideas are marketable, then Intellectual Ventures' economic gamble will have paid off. In order to enter the Intellectual Ventures competition, students agreed to give half of future profits to Caltech and to give Intellectual Ventures the option to license before negotiating with any other party. In return, Caltech promised to provide legal protection and guidance through the thorny patent application process. Typically, Caltech doesn't own an undergraduate invention unless it's developed on Caltech's dime.

Some students disliked the idea of sharing future royalties. One undergraduate sent Edmonds an email that said, "I don't think it's fair you're taking undergraduate ideas." In fact, the second place winner almost didn't enter the

competition.

"At first, I wasn't going to enter it because I heard it was a scam," said Erenrich. "Then I realized that my idea wouldn't make that much money anyway, so I didn't care if it was stolen."

On the other hand, Edmonds and first place winner Glick both believe that the legal guidance is worth a large percentage of the royalties. "This is probably the best chance for undergraduates to generate money from their idea," said Edmonds, noting that less than 1% of all patents generate revenue. Edmonds also added that Caltech could support startups if undergraduates didn't successfully obtain a patent.

Glick has a different take on the benefits of legal guidance. "Have you seen the book of U.S. patent law? It's really thick," he said.

So far, Glick has had to pay more attention to the legal issues involved with patents than any other winner. Glick's invention was generated in the lab of Weijia Wen from Hong Kong University of Science and Technology (HKUST), but at present, HKUST has ambiguous rights to Glick's microrheotronic universal logic gate. Regardless, he plans to continue researching his logic gate at HKUST this summer.

Please see **PATENTABLE IDEAS**, Page 6



Student-invented Sport
Featured
in *ESPN The Magazine*

page 5

In This Issue

News Brief! Caltech and World
Alice is in Wonderland Again
Beware of Nearby Dentistry!

page 6
page 5
page 2

Sports Briefs! page 7

From the Editors

Nearby Dentistry: Not to be Trusted

By Tina Ding
EDITOR-IN-CHIEF

Caltech offers a dental plan that many students have enrolled in. Though it is one of the closest dentistry to our campus, Green Street Dental, located at 1092 E. Green St (intersection of Green St and Wilson Ave) is a horrible choice. Be warned that if you go, you might be advised or pressured into getting a dental crown even if you definitely don't need one.

I have a history of having unkind teeth. They like to form cavities, and eating candy and fruits all the time probably exacerbates the situation. About seven years ago, I've been leaving the dentist office every year with having to return to get filling for on average three cavities. Three was the annual number for a long time, until about two years ago, when my dentist told me it helps to floss. Flossing always seemed like a weird practice to me but I was willing to sacrifice my pre-

conceptions to save my teeth from eventually being completely replaced by artificial fillings, if I keep going at this three cavities per year rate.

Sure enough, flossing made my teeth better, and my annual number dropped to one cavity. I was on the way to clean and healthy teeth. So imagine my shock when I went to the Green Street Dental two weeks ago to get my annual check-up, where they told me that I have four cavities, one of which they claim absolutely needs to have a crown replacement. There is cavity forming between the filling and the top of my teeth

a crown procedure, and very likely root canal as well.

ROOT CANAL? At the time, I didn't really know the technicalities of root canal, but those two words have been conditioned to be associated with pain.

I left the dentist office feeling incredibly sad. Sad that I apparently didn't floss enough, sad that I was born with bad genes for cavity resilience, sad that it was so bad that I need to undergo such painful sounding procedure. My mother, who did not want to pay the \$560 for the procedure, did not want to

believe me. In the name of procrastination, she booked a dentist consultation with my dentist from my home, to get a second opinion on my plight.

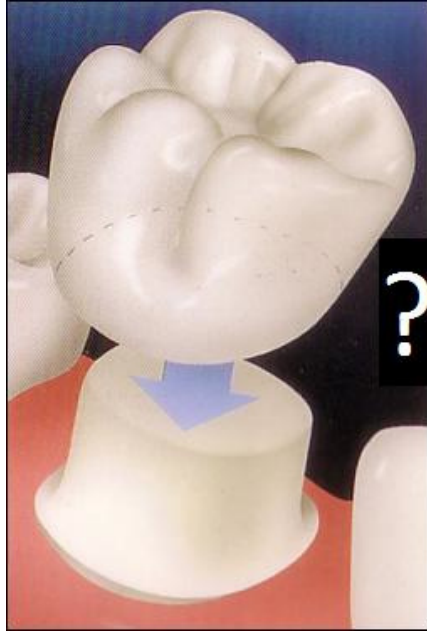
I drove an hour home to my dentist last Friday afternoon. He used his dentist utensils and did some examinations on my teeth, before putting them down and telling me, "No problems this year, but you grind your teeth at night and need a mouth guard."

I told him about my previous consultation, and asked him five times if he's sure I'm completely fine. "not even ONE?" I said almost hopefully. It was definitely strange to go from needing four cavity fillings including a painful expensive procedure, to none at all. He told me that the tooth the other dentist said needs a crown has no cavities forming on the top, and that as long as my tooth doesn't hurt, there's no need to get rid of the natural tooth. Of course, if it is a matter of who to believe, he who knows and fixed all my teeth is the one to trust.

Completely shocked but nevertheless ecstatic at this new information, I told my roommate of the good news. After confirm-

ing the name and location of the dentistry that tried to screw me over, she recounts a similar story just as ridiculous. Dona went to the same Dr. EvilTricks at Green Street Dental a month ago after chipping a small piece of her tooth. Dr. EvilTricks must realize that doing crowns is the way to earn money, because apparently a chipped tooth needs a crown too. He refused to give her resin, which is a simple procedure for filling chipped tooth, saying that if he does, the repaired chip will fall off in a month or less. She marched over to another dentist nearby, who happily mended the chipped tooth with resin (20% the cost of the crown) and even gave her chocolate. Now, almost two months later, the tooth is perfectly fine.

If you're enrolled in the Caltech dental plan, think twice before agreeing to undergo more than ordinary procedures. The Caltech Human Resource receives complaints and provides a list of ill-rated dentistry. It may be wise to consult them.



near the gum, they said. You need the procedure, did not want to

The California Tech

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

Editor-in-Chief
Tina Ding

Layout Editor
Hanna Liu

Sports Editor
Rick Paul

Business Manager
Gabriel Mendoza

Staff
Dannah Almasco
ZeNan Chang
Deboki Chakravarti
Daniel Erenrich
Andrew Freddo
Yang Hu
Casey Jao
Natalya Kostandova
Rebecca Lawler
Sarah Marzen
Monorina Mukhopadhyay
Neha Samdaria
Gloria Tran
James Wu
Wesley Yu

Circulation
Aryan Safaie
Edward Chen

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 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. For subscription information, please send mail to "Subscriptions."

Letters to the Editor

Re: "Tales of Caltech" - Humor section, March 1st Issue

To the Editor:

Our program is deeply offended by this attempted jab. How is this humorous? Because it's a pleasure to laugh at true student-athletes who are committed to a genuine team environment? Because it's enjoyable to make a mockery of one of the more popular spectator sports on campus? Because a group of mostly freshman college athletes weren't able to win a game against legitimate competitors?

Shame on the Tech for creating – and printing – something that seeks to make a joke about a serious activity at OUR university. Shame on the Tech for not doing any research on the program. Shame on the Tech for not realizing the passion and potential of the basketball squad. Shame on the Tech for not writing a sensible story on the team all season.

More than a dozen program records were set this year, including team field goal attempts, blocked shots, and opponent 3-point percentage. Junior captain Ryan Elmquist made Caltech history with his 50 blocks and 208 free throw attempts. Freshman Mike Edwards set the all-time mark for 3-point field goals (62) while leading the SCIAAC in points per game (18.8 ppg) and steals (44) for much of the season. Fellow first-years Collin Murphy and Ethan Boroson were two of the top players in the league in rebounds, assists, and steals as well. Freshman Alex Runkel produced solid numbers in rebounding and field goal percentage.

The list goes on and on because, while there was not a "1" in the win column, significant strides were made as the men's basketball team experienced myriad breakthroughs. So, before trying to get a chuckle with some words that only epitomize what the current program is NOT, one should proceed with more prudence. The un-supportive and distasteful flavor this so-called humor leaves on one's literary tongue is no laughing matter.

Dr. Eslinger
Head Men's Basketball Coach

Dear Coach and Basketball Team,

I wholeheartedly apologize to you and the Caltech basketball team for my "article" in last week's California Tech. Please believe me that when writing it, I strongly considered whether the members of the team would find it funny or offensive, and ultimately I decided on the former. It seems I guessed incorrectly.

My piece was not intended as a jab against you or any of the players or coaches in your program, or your program in general. I picked your team exactly because you are one of the most popular teams at the school. And I wrote the article not to make fun of your team, but rather to bring the general atmosphere of losing in Caltech athletics to light, with the hope that it will change.

It is fantastic that so many records were set this season, and I agree that it is a shame that no serious reporting was done on this. However, individual records do not make it any easier to be a fan when the team does not win. I wish that the program were successful, and that the campus could rally around it. However, until that day comes (and I believe it will come before this group of freshmen graduate), humor (or my attempt at it) is both how I cope and how I hope to help change things. I am sorry that I failed in this case.

Regards,
E.A. Blair, writer of "Tales of Caltech"

Corrections

Our previous article "Coffeehouse Employees Quit" named the supervisor as John-Michael and a student worker as Sylvia Puglisa. Their correct spellings are Jon-Michael and Sylvia Puglisi, respectively.

ASCIT Board of Directors Meeting – Minutes

March 3, 2010

Officers Present: Adam Khan, Karthik Sarma, Tim Black, Brian Merlob, Chris Hallacy, Addie Rice, Laura Conwill
Call to order: 4:06 PM

Funding Requests:

- **Multihouse Funding:** Ricketts has asked for multihouse funding for a barbeque at Dabney this weekend.
- **Blacker Interhouse:** Blacker is requesting its Interhouse funding. This will come out of next term's budget. **VOTE:** Approved (6-0-0)

President's Report:

- **Career Development Center:** Karthik and Adam are putting together a committee of 2-3 students who are going to interview the candidates for assistant director and premed advisor.
- **Chile Earthquake Fundraiser:** Adam was approached by a student in Blacker who was interested in doing fundraising for the earthquake; he is going to look into fundraising methods.

Officer Reports:

- **V.P. of Academic Affairs (ARC Chair):** Signups are going up in a couple of days for ARC Secretary and Rep-at-Large.
- **V.P. of Nonacademic Affairs (IHC Chair):** The rotation committee is going to give its report to Anneila Sargent on Monday. The PFW Saturday schedule is coming together and is currently up at ihc.caltech.edu/saturday/. There was an issue with damage to Avery; this has been resolved.
- **Treasurer:** Karthik gave Hallacy a receipt. Hallacy deposited a lot of checks. Everyone wants money.
- **Social Director:** Addie has been working on planning PFW and the ASCIT movie.
- **Operations Director:** Brian is dealing with Big T stuff. He contacted 2007 presidents from Dabney and Ricketts for information. The 2007 yearbook is 14 paragraphs away from being done (except for Ricketts, which is missing a fair amount of its information). They've made good progress with the 2008 yearbook. Brian has not yet had time to physically hunt down historians. Brian intends to recycle the old Techs in the DDR room soon.

Discussion:

- **Devteam:** A new Devteam needs to be found soon.
- **Attire:** Hallacy is wearing a Totoro sweatshirt. It's very flattering.

Meeting adjourned: 4:25 PMSubmitted by Laura Conwill
ASCIT Secretary

IHC Meeting - Avery - March 2, 2010

Present: Tim Black (chair), DK Lim (Avery), Chris Whelan (Blacker), Andrew Price (Dabney), Alex Lapidés (Fleming), Lucas Hartsough (Lloyd), Will Steinhardt (Ricketts) Dan Kolodrubetz (Ruddock), Laura Conwill (secretary)
Guests: Chris Hallacy

Leadership Fund

DK reports that an alum gave Caltech a lot of money for leadership development at Caltech. This money is devoted solely to leadership development; it cannot be re-appropriated. Andrew was hoping this is enough to start a ninth house, Leadership House. Tom Mannion would like to do use the money effectively. Now that ASCIT and the IHC are turned over, we're start thinking about what to do. Tom already has a few ideas but would like more input. The IHC is going to continue to brainstorm ideas.

Avery Roof Damage

Damage to 40 roof tiles in Avery was discovered by housing. At first it was thought that this may have been linked to Gangsta Night, but there some people remember seeing the damage before Gangsta Night occurred. Housing will pay for the repairs.

Revised Resident Guide to Institute Housing

The Resident Guide to Institute Housing has been revised. Students are not allowed to have pets other than cats and seeing eye dogs in their rooms. In addition, there will be \$100 fines for a lot of violations, such as living in common areas or staying after their contract end. Checking in at the beginning of the year will be enforced.

Prefrosh Weekend

Prefrosh Weekend planning is coming along. The website that Raymond in Dabney is making should be up on Thursday, and there's another PFW meeting on Thursday. The IHC is going to be reviewing Prefrosh Weekend rules soon.

Will gave Dan a pile of money to pay him back \$10, which included 2 euros. This is actually money from Ricketts to Ruddock, so Hallacy will have to deal with it!
 Hallacy: How the **** am I supposed to count this?

ADVERTISEMENT



BE THE ENERGY THAT
 MAKES A TWO-YEAR-OLD
 TERRIBLE.

Within every one of us is the power to heal. It's called marrow, and thousands of patients could potentially be saved by a marrow transplant.

Join the Be The Match® marrow registry and fight for those with life-threatening diseases. Who knows? You could be the one to save a life.

Take the first step at BeTheMatch.org.

BE  THE MATCH®

13 Questions with Professor Warren Brown

interviewed by Sandhya Chandrasekaran



Warren Brown is a Professor of History in the HSS Department at Caltech.

How long have you been conducting your research studies?

Since I was in graduate school back in 1993. I was a graduate student at UCLA, where I got my Ph.D., but I started here in the summer of 1997.

Why Caltech?

A job. [chuckles] I came out of UCLA right when Caltech was looking for a medievalist. And I was trained in a somewhat unusual way; it is heavily influenced by anthropology. I am interested in names, and dates, and places, and things, but I'm also really interested in understanding how society works, the rules that it plays by, and the way that it sees the world, which is kind of anthropological way of looking at things. And the humanities group at Caltech was actually looking for somebody who thought that way.

Is it a different experience teaching a history class at a university that specializes in math, science, and engineering?

I really enjoy it. Kids at more traditional universities often come in with a lot of preconceptions or ideas about history. Caltech students often aren't as concerned about it, so they come into my classes refreshingly free of preconceptions. So it's really a delight. And I've been here now, gosh, going on thirteen years, and I'm not sure I'd be happy anywhere else, to tell you the truth.

What courses do you teach?

I teach a frosh hum, Hum3a, which is the classical and medieval part of the European history group. Every other year, I teach a survey of medieval history for two

quarters. On off years, I do special topics courses. Like this year, I'm teaching a course on knighthood right now, and next term, I'm teaching Vikings. Sometimes I'll do a course on the medieval church. I'm thinking of working up a course on the crusades. So, I just keep my ears to the ground, and whenever I sense the students are particularly interested in something, I'm like, "Eh, let's work up a course on that."

It is rumored that you majored in physics. What prompted your switch to the field of history?

My undergraduate background is complicated. I started out as a musician. I went to the New England Conservatory of Music on the French horn, and I was going to be an orchestra player. But once I got there, I was appalled by how narrow-minded many of my colleagues were. I remember the day that the space shuttle launched for the first time, and I was really excited because I had always been into the space program and science. But I mentioned it to somebody, and they looked at me like they had no idea what I was talking about. It turned out that the New England Conservatory was just starting a double-degree program with Tufts University. I had been exposed to science as a kid because my stepfather is a physicist, so I decided to give it a try. That's how I ended up with two undergraduate degrees, one in music performance and one in physics.

Have you played for the orchestra here?

No, because I've got children (...) But we're about to kick two of them out the door to college, so maybe some time will open up. [chuckles]

What does your current research entail?

I started out in what are called conflict studies, the theory being that how people settle disputes tells us an awful lot about how their society is organized. So I studied dispute resolution and conflict as a way of understanding the political world of the early Middle Ages; in particular, I worked before the year 1000. So my research basically deals with understanding how society is put together, how power flowed, how much kings mattered -- that sort of thing. And then I went on from there. My second

is about the anthropology of violence itself in the Middle Ages.

Why Europe, specifically the Middle Ages?

It's probably not what draws everybody. When I went to graduate school in history, I knew I just wanted to do history; it really didn't matter what kind. Part of me wanted to be an American historian; I think colonial America is actually really cool, but it's a really crowded field. If you count when the Pilgrims first get here in the early 1600s, to now, you've got 400 years, and a country full of historians, all making their careers within these 400 years. The Middle Ages is big -- they go from 500 to 1500. I already spoke fluent German, which was a big help, but I also wanted to learn Latin -- it was just something I'd always wanted to do. So, then, I thought about being an ancient historian. But the classics department at the University of Cincinnati wouldn't let me in because I didn't already have Latin, and the medievalists would let me learn Latin as I was going along. So, totally prosaic. [chuckles]

If you had to be a person from the Middle Ages, who would you be?

Let's face it, my hands are white, they're soft, I've never done a lick of manual labor in my life, and I'm very pale, which means I would probably be instantly identified as a member of the aristocracy, probably as a monk. A monastery meant something different back then than it does now: it's not only a religious center but it's a center for education and learning, and kings often come to abbots for advice. And because I can read and write, and I'm educated, a monastery would probably be a good place to be.

Have you ever fenced before?

I fenced in college, believe it or not. I was on what passed for the team at Tufts at the time. I think my first year on the team I had the singular honor of being the only member on the Tufts fencing team to defeat a member of the Harvard Junior Varsity, which says a lot about our team [chuckles]. No, I enjoyed that. Fencing is a quite specific kind of sword fighting. The weapon is sort of light, you're not wearing any armor and it's as much of a mental chess match as it is anything else.

What is the oddest weapon people used back then?

It's a version of what's called a pike, basically a very long spear. But the thing about pikes is that they didn't just have the point at the end -- they had hooks coming out one side and axes coming out the other.

If you were given the opportunity to time travel to any era, which period of time would you choose?

I would be nervous to go back to the Middle Ages. It's interesting because I study the rules of the game and the period, and I try to figure out how they thought and saw the world, but to actually go back and live it, and try to navigate it without offending somebody and getting hurt or killed would be quite difficult. If I were to go back to the Roman period, I would probably be sold into slavery, because look at me: I'm tall, I'm fair, I've got dark hair -- I'm obviously a barbarian. So I wouldn't be terribly safe going there as well. If I were to go back to any time period in history, I think the 1930s would be really interesting, because it's far enough back that it's a period of history that I'm interested in, but it's close enough that I think that I could still navigate it, and more or less understand the rules.

Are there any last myths about the Middle Ages that you'd like to debunk?

Where do I start? There's more and more evidence that the term "Dark Ages" doesn't apply. The Dark Ages traditionally applies to that period from 500, when Rome ended, until about the 12th century, the high Middle Ages, and anything in between is kind of thought of as barbarian. It is commonly believed that n https://mail.google.com/mail/?ui=2&ik=e61317eb7f&view=att&th=1273c5b6e413d89b&attid=0.1&disp=inline&realattid=f_g6iv3fx00&zw obody could read or write except for a few monks in their monasteries, there wasn't any trade, people were just farming locally, there was lots of disease, and everyone was downright miserable. Well, historians have been not only rethinking the period, but there's been a lot of work done with archaeology. New books are appearing that show that period was a civilization in its own right, that was thriving; although it was not as wealthy as medieval Europe was later on, it was far from a dark period. It actually had quite a lively culture.

Patenting everything from CAPTCHAs to logic gates

1st place, Casey Glick:
MicroRheotonic universal
logic gate

Currently, there are no computation-based microfluidics devices, but Glick wants to change that by developing a universal microfluidic logic gate.

However, according to Glick, the current industry standard would require external computers, which are bulky compared to the sub-millimeter microfluidics devices, in order to have a clear input/output signal.

By using an electrorheologic fluid instead of water or oil allowed Glick to make and control input and output signals using electrical signals and bubbles in the microfluidics chamber.

By the end of his summer SURF in Hong Kong, Glick had tested NOT, AND, and OR microfluidic logic gates. This summer, he plans to experimentally test his design for a logic gate that integrates all three individual logic operations.

When his graduate student mentor was completely unsure of how to integrate the three individual logic gates, Glick realized how innovative his ideas were.

2nd place, Daniel Erenrich:
Client-side video CAPTCHA
using invertible transforms

We've all run across a Captcha before, even if we didn't know that it was a Captcha: when you try to enter a secure site, the computer asks you to read a weirdly stretched word.

Captchas are designed to separate computers from humans, so that computers can't secure sites. However, current Captchas only keep out computers roughly a fifth of the time, said Erenrich, which means that computers can just enter secure sites after roughly five sites.

To fix this problem, security companies are looking to incorporate as much information as possible into as little bandwidth as possible to make it more difficult for computers to pass as humans. Inspired by a discussion of fast Fourier transforms in Blacker's Purgatory, Erenrich developed a different kind of video Captcha that would show users a word embedded in a movie of noise.

Erenrich is not optimistic. "Security friends of mine say that it's amusing but not especially useful."

3rd place, Tamas Szalay:
Multi-touch and eye tracking
for human interfacing

"The area of human-computer interfaces has seen little advancement over the past two decades. The keyboard and mouse remain ubiquitous, with single-finger touchpads being the only major addition. Steadily increasing computer interaction surface area renders mice and touchpads more difficult to use, and the growth in time spent working with computers makes the ergonomics of such devices critical -- it is clear that an alternative is needed. The proposed system combines the best of two potential interface methods, eye tracking and multi-touch, while circumventing the flaws of each. The idea is simple: use eye tracking to center a small multi-touch interface on the region of interest...."

-- Abstract from Szalay's Intellectual Ventures paper

4th place, J. Cole
Hershokowitz:
Smart microgrid technology

Hershokowitz's project may not have won first place in the competition, but it holds a special place in the judges' hearts. According to Edmonds, the judges designed the fourth place award because they were touched by the humanitarianism of Hershokowitz's project, but the judges weren't sure that the idea was marketable or scalable.

Rural areas in developing countries need cheap, reliable electricity, but these towns are often too far away from the nearest power grid to receive cheap electricity.

After interning at a smart grid lobbying organization and working with friends to build a PV manufacturing plant in Bangladesh, Hershokowitz combined the two experiences and asked himself, "What can smart grids do for the developing world's power problems?" The result: a local "plug and play" network that combines the economical "smart grid", which reallocates power more efficiently in real time, with the "micro-grid", which uses local power generators.

Alice Returns to Wonderland

(3.5/5 STARS)

by ZeNan Chang

“Alice in Wonderland,” the sixth partnership between actor Johnny Depp and director Tim Burton, is as quirky as expected, and with the help of technology, is easily the most visually stunning of the twenty or so film adaptations of Lewis Carroll’s “Alice’s Adventures in Wonderland.”

However, Tim Burton’s adaptation is not simply a retelling of the original storyline. Nor is it a remake of the 1951 Disney cartoon. This movie, also from Disney, is set thirteen years later and features a nineteen year old Alice (Mia Wasikowska) who lives by the mantra, “the only way to achieve the impossible is to believe it is possible.”

Once again following the White Rabbit (Martin Sheen) down the rabbit hole, Alice returns to Wonderland to find herself long awaited by the familiar characters of Wonderland. The Mad Hatter (Depp), Absolom the Caterpillar (Alan Rickman), Tweedledee and Tweedledum (Matt Lucas), and the enigmatic Cheshire (Stephen Fry) all refer to her as “the Alice” and have been waiting for her return. In Narnian fashion, she is foretold to be their champion and must represent the White Queen\ Sorceress (Anne Hathaway) in battle. In a now standard climax scene where the forces of good and evil come face to face, Alice must slay the unstoppable Jabberwocky to end the reign of terror under the Red Queen, who is played with a toddler-like relish by Helena Bonham Carter.

Amid all the epic heroism introduced into this story, Burton still finds time to remind us how ridiculous everything actually appears. In the final battle between the chess-shaped white forces and the

card-shaped soldiers of the Red Queen, we can catch hints that we are observing a child at play. We see the cards tumble in domino fashion and even catch a glimpse of an attempted house of cards toppling over, something many of us may have experienced in our childhood days.

The phrase “mad as a hatter” apparently comes from a time when hat makers inhaled mercury fumes in their trade. In “Alice in Wonderland,” the resultant mercurial madness manifests outwardly in an almost unrecognizable Johnny Depp. Bright orange frizzled hair, wide emerald eyes, and heavy makeup mark Depp’s visage as the theatrical Mad Hatter. Depp takes on the Hatter with the same zest moviegoers now expect from him. However, amid all of Depp’s theatrics, he also finds a very human side of the Hatter in flirting moments where the Hatter becomes aware of his growing insanity.

As in many silver screen adaptations of Lewis Carroll’s “Alice’s Adventures in Wonderland,” many prominent characters in Tim Burton’s version are borrowed from

Lewis Carroll’s sequel, “Through the Looking-Glass, and What Alice Found There.” The Red Queen is a mishmash of the Queen of Hearts from the first book and the Red Queen from the chess-themed sequel. The Jabberwocky is a character in a nonsensical poem from the second of Lewis Carroll’s books. The comedic Tweedledee and Tweedledum are also characters taken from the sequel.

As for purported unfulfilled romantic tension between Alice and the Mad Hatter? Sure love is there, of the friendship sort. And Burton does linger on scenes featuring the two. But as for romance, I think not. Then again, perhaps that is just a result of me not believing it possible.

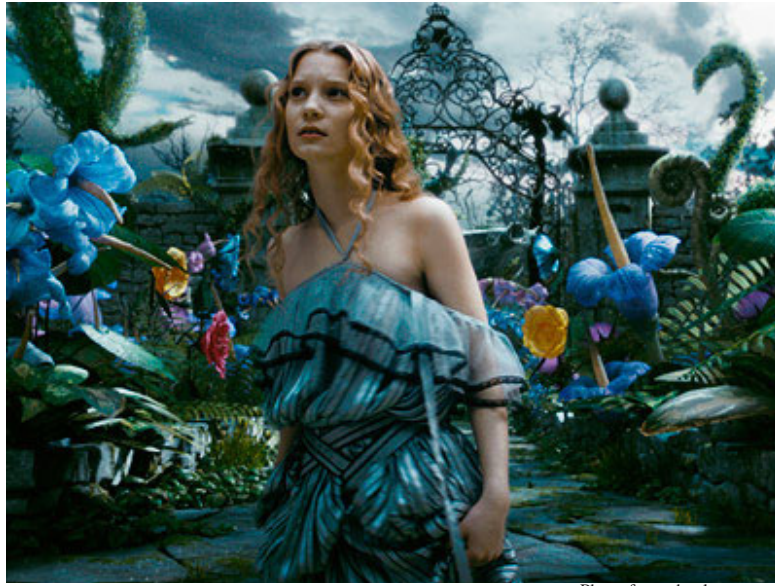


Photo from shockya.com

Students Invent the Sport “Torkball” Featured in *ESPN The Magazine*

by Deboki Chakravarti



Illustration the stadium view of the Torkball, a sport invented by a group of Caltech students

Caltech’s appearances in sports magazine have typically been limited to articles that attempt clever puns about rocket science and quantum mechanics before delving into our less-than-stellar athletic record. But the December 14th, 2009, issue of *ESPN The Magazine* included Caltech in a different context thanks to the inclusion of an idea suggested by a group of undergraduates in a feature that detailed potential sports of the future.

The students, mistakenly labeled by the magazine as “Physics majors at Caltech”, which only holds true for two of the students involved, included Brett Kassof, Benji Lin, Alan Pezeshki, and Kirit Karkare, as well as Dvin Adalian, Chris Dempsey, and Iliya Zilbert, who have graduated since starting this project. Their submission was featured alongside suggestions by Seth McFarlane, comic book writer Matt Fraction, creator of the show *Slamball* Mason Gordon, creator of *Aqua Teen Hunger Force* and *Squidbillies* David Willis, the director McG, and the development team for *Halo 3*. The feature includes an illustration of the sport and an outline that describes the objective of the game, as well as detailing the players, equipment, rules, and field of play.

The sport the group created is called Torkball; it takes place in a donut-shaped playing field that orbits the earth called The Halo. There are two teams of five present in The Halo. Both try to move a ball as far from the starting line as possible in five minutes, but in opposing directions. The field is zero gravity, and players wear air-powered jetpacks on their hands and

feet that allow them to move in any direction. However, when a player takes possession of the ball, their jetpack is disabled until they pass the ball to another player. The game is comprised of matches, which are made up of rounds. The rounds are the five-minute periods in which players try to move the ball around The Halo. Winning a match requires winning three rounds, and whichever team wins two matches first has won the game.

The decision to participate in this feature came after an email sent to the Caltech directory mentioned that *ESPN* was looking for ideas for a feature on sports of the future. The group did most of the thinking during the summer of 2008, but as Benji Lin notes, one of the biggest challenges was “being patient”. “The project was on and then off and then pushed back, etc. That’s why it took so long,” he said.

There are several points of inspiration for the sport that the group drew on. Aspects of ultimate Frisbee, football, and tetherball were included in the rules, as can be seen in the requirement that the player release the ball after having taking possession of it, the contact, and the winding of the ball around the field. They also took into account the possibility of cheap space travel in the future, positing the construction of a sports arena in space as a hypothetical outcome of reducing the cost of sending people and things into space. For anyone interested in seeing the feature, there is a copy in the Ruddock House Library.

News Briefs

Caltech

Board Game Library in SAC opened

The board game club opened its library of games to the Caltech community last week. The collection includes over 20 games and expansions and cost over six-hundred dollars. Funding was provided by the Moore-Hufstedler Fund. The library is currently located in SAC 5B which is on the west side of the SAC.

The MHF proposal was first conceived of to purchase "Space Hulk" a game too expensive for one person to reasonably purchase. Other games in the collection are "Dominion", "Battle Star Galactica", "Pandemic", "Power Grid", "Race for the Galaxy" and many others. The collection represents 9 of the top 30 board games, according to boardgamegeek.com.

While many houses and individuals do have their own personal collections, the board game club hopes to provide universal access to board games to all Caltech students. Students interested in joining the club should contact the club president Gerry Salinas at gsalinas@caltech.edu. The club hopes to have more members and plans to

seek funding from ASCIT to further expand its board game offerings.

-Daniel Enrenrich

Alumni Director Leaves

Andy Shaindlin, Executive director of the Caltech Alumni Association is leaving Caltech after ten years of service to the institution. He has worked with Caltech undergraduates on House Reunions, Big Interhouse, and alumni holiday tours. Shaindlin also has a blog: alumni-

futures.com in which he discusses modern technology and alumni associations. Check out/Contact: alumni-futures.com

Off campus BOD Election

Vanessa Burns is running unopposed for Off-Campus Board of Control Representatives(BOC).

Southern Food Special at Coffeehouse

Thursday 3/11, 10pm – 2am, Tom Mannion will be cooking with Fred and Julie Heltsley.the menu will include Tom's Pulled Pork sandwich with award winning barbecue sauce and coleslaw, while the Heltsleys will be cooking traditional southern breakfast.

World/Nation

OCARS 2010 WINNERS

Best Picture: *The Hurt Locker*

Best Actor: Jeff Bridges, *Crazy Heart*

Best Actress: Sandra Bullock

Best Art Direction: *Avatar*

Best Directing: *The Hurt Locker*, Kathryn Bigelow

Shamu Kills Trainer

An experienced Seaworld animal trainer was killed by a whale during Dining with Shamu, a performance and dinner feature of Seaworld. According to witnesses, the whale grabbed the trainer with its mouth and swam rapidly around the tank, tossing her around. The trainer was fatally injured.

Steampunk OPI



A huge clock, built as part of the construction for OPI, Ruddock Interhouse, turns at the party last Saturday

Music Groups Perform at Festival

MUSIC FESTIVALS, From Page 1

Currently, the choir practices in the basement of Beckman auditorium on Mondays and Wednesdays. The choir also performed on Parent Day earlier this term.

The Caltech Glee Club is com-

prised of a Men's Glee Club and Women's Glee Club, which meets separately and combines for practices once a week and for public performances. This year marks the 105th season of the Men's Glee Club. The Women's Glee Club is the oldest organization for women on campus. Both groups play important roles in extracurricular life at Caltech. Membership is open to anyone in the Caltech/JPL community wishing to sing.

HELP US HELP CHILE!

"Chile ayuda a Chile"

On Saturday February 27th 2010, a devastating 8.8 magnitude earthquake followed by a tsunami struck south and central Chile. This earthquake was one of the most powerful events registered in world history, and it destroyed several cities across the country. More than 800 people were killed and over 2 million are struggling with a lack of food, basic services, and above all housing, according to government estimates. The number of affected people corresponds to nearly 12% of the total population in Chile. The country's infrastructure and basic services (highways, hospitals, water and electric utilities) have been severely damaged or destroyed. Preliminary estimates indicate that the total damage caused by this catastrophe could be up to 30 billion dollars, or nearly 18% of the country's 2009 GDP.

From Monday March 8th to Friday March 12th, the Chilean community at Caltech in a joint effort with the Caltech-Y and CLASES are organizing a fund-raising to support the Chilean relief initiative "Chile Ayuda a Chile" (Chile helps Chile).

What is this initiative?

To overcome the emergency and help the earthquake and tsunami victims, as well as to help in the reconstruction of the country, a national telethon was organized by the Chilean government and several Chilean-based relief organizations. Since Chile is a very long country, when a natural disaster occurs it strikes only a portion of its territory, and this initiative comes alive to coordinate aid from within the country, sponsored and supervised by the Chilean Government. The "Chile Ayuda a Chile" telethon took place Friday March 5th and Saturday March 6th, and it raised an estimated of 60 million dollars. This sum is just a small fraction of the total damages caused by the earthquake, and donations are still being received by the "Chile Ayuda a Chile" organization in the following weeks.

What is the Caltech Community doing?

At the sight of this tragedy we can't be absent, so throughout this week (03/08 – 03/12) volunteers from the Caltech-Y, CLASES, and the Chilean community at Caltech, will be collecting donations every day from 11 am to 2 pm at the Chandler - Red Door area. We will also be giving general information on how to support this cause and other Chilean-based relief organizations.

What are the organizations receiving the funds?

The funds are being collected in a centralized way and will be distributed among a number of well-known Chilean based charity organizations:

- Fundacion Teleton
- Hogar de Cristo
- Un Techo para Chile
- Fundacion para la Superacion de la Pobreza
- Caritas Chile

The money raised will be used to build temporary housing and provide emergency relief (food and health care) for the affected families. The aid will be distributed among the different organizations taking into account the most urgent necessities as determined by the government.

By donating directly to these Chilean-based organizations, our impact can be larger as resources can be distributed in a more effective way. Come to the Chandler-Red Door area during this week to make your donation and get more information about the charities and organizations involved in this effort.

**AFFORDABLE
CATALINA
SPRING BREAK
VACATION**

**TWO NIGHTS
LODGING**

**ROUND TRIP
BOAT**

**CHOICE OF:
MINI-GOLF
BIKE OR
SNORKEL**

**PRICE BASED
ON DBL OCC.**

**DEP. 03/22/10
RET. 03/24/10**

\$199.50

www.hermosahotel.com

800-668-6829

Standings

SCIAC Men's Baseball Standings

	Conference		Overall	
	Record	Win %	Record	Win %
Pomona-Pitzer	9-0	1.000	10-4	0.714
Redlands	10-2	0.833	12-2	0.857
CMS	5-4	0.556	8-7	0.533
Cal Lutheran	4-5	0.444	9-7	0.562
Occidental	4-5	0.444	7-9	0.438
La Verne	4-5	0.444	6-8	0.429
Whittier	1-6	0.143	2-12	0.143
Caltech	0-10	0.000	0-11	0.000

SCIAC Men's Tennis Standings

	Conference		Overall	
	Record	Win %	Record	Win %
Cal Lutheran	3-0	1.000	6-0	1.000
CMS	3-0	1.000	5-2	0.714
Pomona-Pitzer	2-1	0.667	4-1	0.800
Redlands	2-1	0.667	5-3	0.625
Occidental	1-3	0.250	4-3	0.571
Whittier	1-3	0.250	4-4	0.500
Caltech	0-4	0.000	3-4	0.429

SCIAC Women's Tennis Standings

	Conference		Overall	
	Record	Win %	Record	Win %
CMS	3-0	1.000	4-0	1.000
Pomona-Pitzer	3-0	1.000	3-0	1.000
Cal Lutheran	3-0	1.000	5-1	0.833
Redlands	3-0	1.000	3-1	0.750
Occidental	1-3	0.250	2-4	0.333
Whittier	0-3	0.000	3-5	0.375
Caltech	0-3	0.000	1-3	0.250
La Verne	0-4	0.000	1-5	0.167



The Weekly Scoreboard

March 1, 2010

Women's Water Polo vs. Gannon (PA) L 3-17

March 5, 2010

Baseball vs. Whittier L 3-20

March 7, 2010

Baseball vs. Whittier L 2-24

Baseball vs. Whittier L 3-26

Sports Briefs

Caltech Fencing Squad Set to Compete at UCSD for NCAA Regionals

Caltech Fencing coaches Michael D'Asaro and Carla Corbit are preparing their team for a trip to the NCAA Western Regional Fencing tournament at UCSD on Saturday, March 13. At stake is a trip to the National tournament held at Harvard University in Cambridge, MA. The Beavers will be up against stiff competition as they face off against perennial powerhouses like Air Force, Stanford, and UCSD.

Caltech Women's Tennis Defeats La Sierra After Three Game Losing Streak

1. Stephanie Kwan (CIT) def. Ariana Ruiz (LSU) 6-2, 6-2
 2. Leslie Tong (CIT) def. Loreal Dugue (LSU) 6-1, 6-1
 3. Wubing Ye (CIT) def. Denise Marquez (LSU) 6-2, 6-2
 4. Seorim Song (CIT) def. Grace Ann Aragon (LSU) 6-1, 6-0
 5. Prakriti Gaba (CIT) def. Rachel Data (LSU) 6-0, 6-0
- Caltech 5, La Sierra 0

Senior Lisa Yee Wins the 2009-10 Baldwin Award

The Caltech Women's basketball team announced, last Wednesday, that senior Lisa Yee was chosen as the recipient of the Ed Baldwin Memorial Award for 2010. The Baldwin award is given annually to a SCIAC senior who demonstrates superior sportsmanship and contribution to the league over the course of her career. During her four years at Caltech, Yee has been part of all six conference wins. She is one of only three Caltech players to receive conference recognition, the last being Lindsay King, Caltech's all time leading scorer, in the 2007-08 season. This season she has averaged 9.4 points per game and 11.1 rebounds per game. She finished her career as Caltech's leading rebounder, averaging just shy of a double double.

Highlights from the Rossi Relays at CMS (March 1, 2010)

MEN

100m:

Frosh, Brice Nzeukou finished in 5th place with a time of 11.61

Sophomore, Kyle Martin took 7th with a time of 11.68

HIGH JUMP:

Junior, Alex Lapidis tied for 2nd a jump of 6'0", which was 1st place SCIAC competitors

JAVELIN:

Senior, Tom Rose moved up one spot on the Caltech All-Time Top 10 List in with a lifetime best of 133' - 5" placing him in 18th place on the day

WOMEN

3000m:

Sophomore, Sylvia Sullivan ran a lifetime PR of 11:26.78 and moved up to the #3 spot on the Caltech All-Time Top 10 List.

HIGH JUMP:

Sophomore, Jessica Swallow tied for 4th place in the HJ and tied her lifetime PR with 4' - 9 3/4". She also finished 13th in TJ with a jump of 31' 1 3/4"

Women's Water Polo Kicks Off Season

The Caltech women's water polo team kicked off their season last Monday against NCAA Division II opponent Gannon University (Erie, Pennsylvania). Caltech swam hard and moved the ball well, and their hard work paid off in the form of three goals. Freshman Hannah Dodd led the Beavers with a goal and two assists on the night. Erin Hoops and Chau Liu also contributed to the effort with one goal each. Despite goalie Panna Felsen's best efforts, Gannon succeeded in getting the ball into the goal seventeen times. In last year's contest, Caltech was unable to score against Gannon, so despite the disappointing outcome of Monday's season opener, the team did show some signs of improvement on opening night.

