



## Caltech's Fall Career Fair: Frosh perspective

**SHANNON WANG**  
Contributing Writer

Let me get this out of the way: I'm not an avid fan of career fairs and this piece isn't an advertisement for future fairs. Jobs are the proverbial carrots in most of these events, and even when the opportunities are real, the fairs can still be nightmarish. Career fairs aren't designed with introverts in mind and they're just as dreadful for even the most outgoing and vivacious applicants, because no one is safe from being The Poor Schmuck – the one who's been standing third in line forever as the volume of the recruiting conversation ahead soars to all-time high and the recruiter launches into another speech with furious head-bobbing and wild gesticulating. But despite all this gripping drama, I still believe that attending the career fair is a worthwhile experience.

I was that poor schmuck during Tuesday's career fair, feeling horribly out of place as I waited behind a graduate student who had much more business standing there than I did. I had no resume. I didn't come with high expectations of landing an internship, because it was painfully obvious I was a kid fresh out of high school and nobody in his right mind would

offer me a job. I hadn't prepared a thirty-second self-introduction because one look at my name badge told the recruiters all they needed to know about me: year and major. I had never felt more socially inept – I drew blanks on career fair etiquette. Do I continue standing here? Or should I move? Will it look bad if I stop waiting in line? Where do I move to? How do I start up a conversation when everyone looks busy? And the most important question: How do I keep from being judged?

I suspect that this is what most of the freshmen present at the fair felt. I suspect that this is what the other freshmen will feel when they attend the upcoming fairs in winter and spring. And I suspect that at the end of their experiences, they will have declared the whole ordeal to have been worth it, because they will

and be judged. You are free to judge, too. So judge away, because your opinion of a company should be just as important as their opinion of you.

2) You will screw up. You will fumble through the conversation and you will wince whenever you recall that particular booth and hate yourself for being curious enough to inquire about that company, but if you're

and stop with the arm-flailing works about as well as staring.

4) Bring a whole stack of your resumes, because there are opportunities for freshmen. Even those who aren't outright hiring are still handing out business cards and telling you to keep in touch. You will be talking to recruiters from Microsoft, Intel, Goldman Sachs and the like. Not all of them were willing to take freshmen, but it's worth a try.

Even more importantly, don't go into the fair with an attitude as pessimistic as mine. I won't natter on about the fair being a great opportunity to network and

socialize, but I will say that it gives you perspective. It goes without saying that Techers are brilliant and resourceful: we can carve out our own niches in the world if there aren't ones already waiting for us. But a career fair serves to remind Techers that there is a place for us in the world where our talents are both wanted and needed. It reminds Techers of all the good they dreamed of doing and helps bring all those dreams to fruition. Perhaps some of the jobs are still carrots, and perhaps you'll still find yourself as The Poor Schmuck. But there will be opportunities that suit you and there will be at least one enlightening conversation – and really, what else are you going to do in that hour?



Caltech students talk to potential employers about internship and job opportunities.

-Bob Paz

have learned how to make their future job-hunting as painless as possible. For the frosh who didn't attend and are curious, here are the conclusions I have drawn:

1) Career fairs are judgment zones. People are there to judge

lucky, you'll leave with a free t-shirt and an armful of brochures anyway.

3) Don't stand in line. Come back later if you must, but don't waste time staring plaintively at the recruiters. Willing them to finish

### In this issue

**NEWS**

New events from the Caltech Y

3

**OPINION**

Brad urges us to stick to our sizes

4

**FEATURE**

Interview with Professor Nets Katz

5

**SPORTS**

Women's volleyball team earns two victories

7

## News briefs from around the globe

Helping readers burst out of the Caltech bubble

**Need to know**

< **100** words about the world this week – topics sorted from good to bad

by *The Tech Eds*

<b>Hostages arrive home</b>	<b>9</b> Lebanese citizens captured by rebels in Syria in 2012 were released <a href="#">[BBC]</a>
<b>Titanic violin auctioned</b>	<b>\$1.45M</b> was the price the violin (played as the Titanic sank) fetched <a href="#">[BBC]</a>
<b>US to donate to Pakistan</b>	<b>\$1.5</b> -billion assistance package planned for programs in Pakistan <a href="#">[NYT]</a>
<b>Gay adoption approved</b>	<b>1</b> st woman in France allowed to adopt her wife's biological children <a href="#">[TIME]</a>
<b>Toyota recalls faulty cars</b>	<b>885,000</b> vehicles were recalled due to water leakage from AC unit <a href="#">[BBC]</a>
<b>Bushfires wreak havoc</b>	<b>200</b> homes and 91,400 acres have been burned in New South Wales <a href="#">[BBC]</a>
<b>Deadly earthquake hits</b>	<b>7.1</b> in magnitude, an earthquake in the Philippines killed at least 183 <a href="#">[CNN]</a>

## Food with Mannion!

*Do you like eating food?  
How about free food at nice restaurants?  
Ever want to tell the world exactly what you think of said food?  
The Tech will be beginning a new column to chronicle the foodie experiences of new writers every other week... The Catch: They'll be going head-to-head with Tom Mannion who will be reviewing the same restaurant. If you have ever thought you were more of a gourmand than our resident master chef, now's your chance to prove it!  
Email us for a spot on the list at [tech@caltech.edu](mailto:tech@caltech.edu)*

### 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)

Editors-in-Chief  
Jonathan Schor  
Stanford Schor

News Editors  
Neera Shah  
Nehaly Shah

Photography Editor  
Alex Hsu

Staff  
Brad Chattergoon  
Malvika Verma

Circulation Manager  
Michael Paluchniak

Advisor  
Richard Kipling

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## Write articles for the Tech

get paid up to \$30

## Last week's ASCIT Minutes\*

\*(Since ASCIT didn't send us any)

Minutes for October 9, 2013. Taken by Catherine Jamshidi

### President's Report (Zach):

New important times:

ASCIT will meet every Wednesday at 10pm in SAC 15.

ARC will meet every Sunday at 3pm in the SFL MCR.

IHC meets every Tuesday at 12pm in the house dining halls.

### Officer's Reports:

#### V.P. of Academic Affairs (ARC Chair: Malvika):

The ARC is looking for students that are interested in advising the Faculty Committee about what to do with the 9th floor space in Millikan Library. Anyone interested should contact Malvika at [mverma@caltech.edu](mailto:mverma@caltech.edu)

Should we not let students view grades until they fill out TQFRs?

There was an Ombuds Training Session on Friday at the Center for Teaching, Learning, and Outreach that geared towards freshmen and sophomores to prepare them for their roles as ombuds.

The ARC is looking for 2 frosh ARC reps. Interviews will be this Sunday from 3-5 pm on campus.

#### V.P. of Non-Academic Affairs (IHC Chair: Connor):

Rotation happened, and it went well.

In light of recent events, the IHC is looking at more formal procedures for approving Rotation activities.

The South House RLC search committee has made a recommendation; we are hoping s/he will start near the beginning of November.

#### Director of Operations (Connie):

Would like to have more ways of advertising clubs (more than just the club fair and a list on Donut).

Club (re-) registration is going on now. More information can be found at [www.clubs.caltech.edu](http://www.clubs.caltech.edu)

ASCIT Inventory:

Working to standardize the process for lending equipment out to houses/GSC for parties and checking it back in in a timely manner.

#### Treasurer (Monica):

Club Funding Day is October 27th.

Would like to come up with a system where people requesting reimbursements for purchases must meet with Monica at a specific time/place so as to lessen the amount of back-and-forth emailing happening now to meet up with someone.

Will send out details regarding new reimbursement procedure.

#### Social Director (Michelle):

End of Rotation party was cancelled, but Page is working to reschedule it (tentatively this Friday).

The Carnival was last Saturday and went well.

Fleming Frosh Party is happening this Saturday, October 19th.

#### Secretary (Cat):

The Health Advocates Page on Donut has been updated with current information. It can be found at [http://donut.caltech.edu/ascit/Health\\_Advocates](http://donut.caltech.edu/ascit/Health_Advocates)

If you notice any pages on Donut that do not have up to date information, please send me an email and I will try to fix it immediately!

## NOMINATE YOUR FAVORITE PROFESSOR FOR THE FEYNMAN TEACHING PRIZE!

*Here's your chance to nominate your favorite professor for the 2013-14 Richard P. Feynman Prize for Excellence in Teaching! You have from now until January 2, 2014 to submit your nomination package to the Provost's Office to honor a professor who demonstrates, in the broadest sense, unusual ability, creativity, and innovation in undergraduate and graduate classroom or laboratory teaching.*

*The Feynman Prize is made possible through the generosity of Ione and Robert E. Paradise, with additional contributions from an anonymous local couple. Nominations for the Feynman Teaching Prize are welcome from faculty, students, postdoctoral scholars, staff, and alumni.*

*All professorial faculty of the Institute are eligible. The prize consists of a cash award of \$3,500, matched by an equivalent raise in the annual salary of the awardee. A letter of nomination and detailed supporting material, including, but not limited to, a curriculum vitae, course syllabus or description, and supporting recommendation letters should be emailed to [kkerbs@caltech.edu](mailto:kkerbs@caltech.edu) or directed to the Feynman Prize Selection Committee, Office of the Provost, Mail Code 206-31, at the California Institute of Technology, Pasadena, California, 91125. Nomination packages are due by January 2, 2014.*

*Additional information including guidelines for the prize and FAQ may be found at <http://provost.caltech.edu/FeynmanTeachingPrize>. Further information can also be obtained from Karen Kerbs (626-395-6039; [kkerbs@caltech.edu](mailto:kkerbs@caltech.edu)) in the Provost's Office.*

## Caltech Y Column: Look out for new events

**PHOEBE ANN LAURA SANTOSO**  
Contributing Writers

Hi everyone! This is the Caltech Y Column, designed to inform you about the Y and the opportunities we provide for you to inspire your passions, whether by participating in our programs or leading your own!

Founded by students in 1916, the Y was organized to provide extracurricular activities planned and implemented by students as an opportunity to gain leadership skills and discover their passions and themselves.

The mission of today's Caltech Y remains the same—to provide opportunities that will prepare students to become engaged, responsible citizens of the world. The Y seeks to broaden students' worldviews, and raise social, ethical, and cultural awareness through teamwork, community

engagement, activism, and leadership.

The Caltech Y's mission and core values stand on five key pillars: leadership, civic engagement, service, adventure, and perspective. Regardless of which pillars capture your interest, feel free to attend any of the below programs, or contact us to organize your own!

Here's a sampling of past programs held by the Y:

- Alternative Spring Breaks: Costa Rica, New York, Yosemite, San Diego, San Francisco

- Make-A-Difference Day: Hillside Home for Children, LA County Arboretum and Botanic Garden, Children's Hospital Los Angeles (Coachart), Eaton Canyon, Lifeline for Pets

- Explore LA: Lakers game, Next to Normal musical, Norton Simon Museum trip

For a student's perspective, feel free to contact Phoebe Ann at [phoebe.ann2@gmail.com](mailto:phoebe.ann2@gmail.com) or Laura

Santos at [santosolaura@gmail.com](mailto:santosolaura@gmail.com).

### Upcoming Events:

1. Rise Tutoring Program  
Mon.-Thurs. | 4-6pm | Winnett, 2nd Floor

The Caltech Y Rise Program is currently accepting new tutors. The Rise Program is an afterschool math and science-focused tutoring program that serves public school students between grades 8 and 12.

The tutoring takes place on the Caltech campus Monday-Thursday from 4pm-6pm. For more information about the program and to apply please visit our website at: [http://caltechy.org/programs\\_services/tutoring/](http://caltechy.org/programs_services/tutoring/).

2. Hathaway Sycamores  
Saturday | October 12th | 1:30-4:30pm | Highland Park

Volunteer at Hathaway-Sycamores, a group that supports local underprivileged but

motivated high school students. Some of the subjects being tutored are AP Chemistry, AP Physics, and AP Calculus.

For more info and to RSVP Email Josie Kishi [atjkishi@caltech.edu](mailto:atjkishi@caltech.edu).

3. Explore LA: Cirque Du Soleil's new show TOTEM

Friday | October 25th | 8:00 pm | San Pedro, Port of Los Angeles  
Note: tickets are sold out.

TOTEM traces the fascinating journey of the human species from its original amphibian state to its ultimate desire to fly.

Inspired by many founding myths, it illustrates, through a visual and acrobatic language, the evolutionary progress of species. Somewhere between science and legend TOTEM explores the ties that bind Man to other species, his dreams and his infinite potential. Explore LA is coordinated by the Caltech Y with generous support

from the Master of Student Houses (MOSH).

### 4. Ice Cream Competition

In an effort to further familiarize students with the location and services of the Caltech Y, ExComm will be holding a competition, with the help of Tom Mannion, among the undergrad and grad houses to come up with the best new flavor of ice cream. The winners and, of course, tasting opportunities will take place at the Y.

Date(s) and more details to come.

If you have any questions at all, feel free to contact the Caltech Y at (626) 395-6163 or [caltechy@caltech.edu](mailto:caltechy@caltech.edu).

Go to <http://caltechy.org/lists/> to self-subscribe to announcement lists for upcoming events and sign-up information.

## Caltech and MOOCs Part III: Benefits for Caltech's Education

**CONNOR ROSEN**  
Contributing Writer

*This is the third in an ongoing series of articles examining Caltech's involvement with and initial forays into online education. Previous articles have introduced MOOCs, Caltech's partnerships with Coursera and edX, and the anticipated benefits of these partnerships.*

Previously, I stated the potential benefits that MOOCs could offer to Caltech. One of the primary goals, according to Provost Edward Stolper, was "to improve ... how we educate future generations of scientists and engineers here at Caltech."

There are a number of ways that using MOOCs and Coursera is supposed to benefit Caltech students.

One innovation that MOOCs can offer to Caltech courses is the "flipped classroom" model. In this model, students watch the lectures and do readings on their own, before class time – perhaps with small exercises to assess learning. Then, in class, they have the opportunity to reinforce the fundamentals they learned with harder examples, extensions of the material, and general "gelling of the information," as Professor George Djorgovski describes it

in the Caltech MOOC Report on Youtube.

The flipped classroom is one form of "mastery learning." Mastery learning, or "Feedback-corrective" instruction, is a form of instruction where students are assessed multiple times and corrective feedback is constantly applied. In this way, students have more opportunities to learn from their mistakes and reinforce gaps in their understanding. Because the students come to class already having been exposed to material, class time with the professor can be used to give careful feedback on the small gaps left by the lectures. MOOCs also use mastery learning through the quizzes embedded into lectures, which provide constant feedback and check understanding at a basic level.

While mastery learning is a well-founded pedagogical method, it is unclear why a partnership with Coursera or edX, or even the use of MOOCs in general, is necessary to implement mastery learning in Caltech courses. Lectures could be easily pre-recorded for most classes at Caltech – in fact, a number of courses are already

recorded by students, at no cost or additional effort to the professor, and posted on the Caltech network for review by the students in the course. Clicker quizzes in some

re-recording allows professors to improve their lecturing. We can, in this instance, quantitatively examine the impact preparing for a MOOC has on a professor's

Caltech students see. The final proposed benefit of MOOCs to Caltech students was put forth by Vice Provost Melany Hunt at the faculty meeting last February.

Professor Hunt discussed Bloom's Taxonomy, a method of organizing different cognitive processes – with high cognitive processes, such as "creating," being more desired and valuable than lower cognitive processes, such as "remembering." According to Professor Hunt's slides, MOOCs can potentially access higher cognitive processes than normal Caltech problem sets.

However, I have found no research on how MOOCs fit into Bloom's taxonomy, likely due to their short existence.

Thus, I believe it is too early to claim that MOOCs are pedagogically superior and more stimulating than Caltech problem sets.

In short, there seems to be no fundamental educational benefit that Coursera or edX, or any MOOC in general, offers Caltech students that is well supported by educational research I have seen or data available after the initial experimental courses, or justifying the substantial investment of time and money by Caltech.

“...it is too early to claim that MOOCs are pedagogically superior and more stimulating than Caltech problem sets.”

classes could, if used properly as a learning tool instead of a method for forcing attendance, serve the role of the embedded quizzes. Mastery learning techniques could be incorporated into recitation sections and office hours through more comprehensive TA training and collaboration between professors and the new Center for Teaching and Learning. In short, MOOCs offer no clear pedagogical advantage for Caltech courses over an easy and cheap (in terms of both time and money) in-house fix of our teaching practices.

Another possible benefit of MOOCs, according to the professors who taught them, is that the repeated practice and

perceived instructional ability. Professor Antonio Rangel taught Ec11 two years in a row, in Spring 2012 as a normal Caltech course and in Winter 2013 as a Coursera course with pre-recorded lectures and the supposed benefit of more practice.

Comparing TQFR reports from these two terms indicates that there is no significant increase in any aspect of Professor Rangel's lecturing – from the overall quality to his clarity to his ability to connect course topics to each other. There was no significant decrease in any of these, either – it appears that preparing for a MOOC fundamentally has no effect on the quality of instruction

## Brad/Chad Couture: Dress up to your body type

**BRAD CHATTERGOON**  
Staff Writer

Hi loyal (And not-so-loyal) readers! Looks like this week I will address the issue of how to deal with dressing if you're the skinny guy, the chubby guy, the tall guy, or the short guy.

While there are many different types of bodies, the one thing that is common across all of them is wearing clothing that fits well, very much unlike the clothing choice in this week's picture that fits me like a bag.

### The Bulky/Large Man

This type of body type benefits from avoiding baggy clothing and also from avoiding very tightly fitted clothing. The ideal fit is trim but not snug. Clothing should lightly hang from your body rather than stick to it or drape from it. Horizontal stripes are generally also your enemy, especially in wide blocks. Stripes of this orientation tend to encourage the eyes to focus in the horizontal plane, adding width to your already burly frame. If choosing stripes opt for vertical patterns that encourage the eyes to focus vertically causing you frame to appear to lean out. Do you remember the monochromatic layering that I suggested in a previous article? That style is your friend, but keep the layers light. It helps your frame to seem longer by causing the eye to perceive your clothing as one long stream of varying shades, which again

adds a leaning effect to your body. Wearing a belt will also help to pull in any extra space on your frame, again reducing your bulky

appearance. Neck-ties should also be a bit on the wider side to avoid looking like you hung a piece of thread from your neck. This final

point is probably the easiest to incorporate: wear more button down shirts. Because button downs are generally made of a solid fabric that does not cling to your body, it can easily forgive you an extra ten pounds by keeping it from being on display. Darker colors are also favorable and add to slimming.

### The Tall and/or Skinny Guy

The number one problem for you will be finding shirts that fit well. In the US there is a tendency to aim clothing sizes at larger patrons and so often times you will not find any clothing in XS. Alternatively, if your size is S, then the shirts might not be tailored enough for you. There are two ways to deal with this when it comes to button downs: have your clothing tailored, which is expensive, or purchase clothing from brands that tend to cater to slimmer or taller individuals. Good examples of brands like these are Armani Exchange and J-Crew. As for Tees, American Eagle has an assortment of tees, henleys and polos that come in XS and Tall sizes at reasonable prices. For you however, monochromatic looks are going to accent your small frame so it is best to avoid using this style. Layering

is encouraged to help add some extra bulk. Opt for breaks in color like with the color blocking style, which will help you look slightly larger. Neck-ties should be skinny, probably not more than 2 inches across at the widest point. Vertical stripes are also a no-no and do your best to avoid walking into the women's section of the jean store to get that "skinny jean" look because none of the men's jeans can give it to you. This will overemphasize your skinniness.

### The Vertically Challenged Dude

Like the skinny/tall guy, your clothing needs to be a snug fit to avoid an overbearing look where your clothing appears to be trying to consume you. Wearing a single color on your shirt and pants will help to prevent separating your frame into two short parts and instead keep it as one long piece, which can give the illusion of height.

You can cheat a little by purchasing shoes that have a bit of a heel on them. You also want to avoid very big prints and patterns as these can be a bit too large for your frame, instead going for smaller prints like micro-check and vertical stripes. You can also use accessories to take attention away from your frame and more onto your face. Good examples of accessories are neckties (skinny) and hats. Hats are especially good since they can add height. Also remember: good posture is an immediate help to your appearance.



Resident fashionista Brad Chattergoon dons an uncharacteristically ill-fitting shirt to demonstrate the importance of dressing to one's size.

-Brad Chattergoon

## ARC spotlights new math professor Nets Katz

**JONATHAN LIU**  
ARC Representative

*Nets Katz, a professor of mathematics, is one of Caltech's new faculty members. Katz earned his BA in mathematics from Rice University in 1990 and his Ph.D from the University of Pennsylvania in 1993. Before coming to Caltech, he was a professor of mathematics at Indiana University Bloomington, and was named a Guggenheim fellow in 2012. He recently answered a few questions about his work, interests and opinions, and his experiences teaching Ma1a, the freshman core mathematics class.*

**What kind of research do you work on?**

I'm trained as an analyst. When you think of analysis, maybe you think of something like the epsilon delta proofs that you learn in Ma1a. That's what I'm interested in on some level – I'm interested in proving inequalities. However, underneath these inequalities there's an element of counting involved as well. So, I'm also very much a combinatorialist. For example, some of the problems I work on currently have to do with Euclidean geometry. One result that I'm known for involves estimating how many distinct distances there have to be between any set of  $N$  points. In such cases, you know how many points there are, but you don't know where they are. From there, you want to know how many different numbers are

distances between those points; that's the sort of work I do.

**How did you first get interested in mathematics?**

I've basically been doing math my whole life – I guess most people here can say that. But I was quite good at it, and my father was a physicist, so we would often have conversations about mathematics at the dining table. I remember that he'd say something like: "These mathematicians, they don't know what they're doing. They have this Lebesgue measure theory, but some of their sets aren't measurable. Somebody needs to go out there and fix that." I guess he convinced me of this, and somehow my whole life since then has been mathematics. So, at one level I can say that these early conversations really affected my thinking to this day. For instance, I'd say that I believe in infinite sets a lot less than most mathematicians. I think that everything that's going on in mathematics is really finite at an underlying level, so the mathematics that I do is really about finite problems.

**I hear that you're teaching Ma1a this year. What are your goals for the class, and why?**

First, I'd like to say that I really do want to teach Ma1a. It's kind of unusual that someone who just got here would be doing that. Usually, you take a few years and then it's considered worth it to do these things. But, I actually want to be doing this – I'm very excited

because the students here are so much better than the students I'm used to. And what I want to get through to the students in Ma1a is that math is something they can understand at a very basic, fundamental level. Even if they don't end up being math majors, it's still important to teach them to do things right and realize that it's possible to work out mathematical problems. Ma1a is something very, very basic, the beginning of the field. By teaching Ma1a, I hope to talk about the basic fundamental things of my field to as broad an



-Nets Katz

audience as possible, and to be able to do that in a way that I think about things. That's what I'm after, and I think that Caltech is practically the only place in the world where that's possible.

**Can you give me an example of how you teach Ma1a in your own style?**

There are some differences between what I'm doing and what other people have done in the

past. For example, one thing I'm doing that seems a little strange to some people is that I define the real numbers as infinite decimal expansions. In *Apostol*, the textbook with the more common approach, the real numbers are defined by a long list of axioms. After some careful and rigorous thinking, you find out that there's only one thing that satisfies these axioms, and that's the real numbers. Personally, I find that approach sort of off-putting, because you start off saying "I don't know what the real numbers are, but I have some wishlist for what they are, and maybe eventually I can find out that my wishlist satisfies it." But before I find this out, I know absolutely nothing about the real numbers. On the other hand, my students have all done high school, and they've been talking about real numbers for a long time. Infinite decimal expansions are really the closest thing they have to a definition. However, high school tends to lack mathematical rigor, and they usually haven't really thought the idea of infinite decimal expansions through completely. For example, how do you add two infinite decimal expansions? It turns out that by thinking about this problem, you discover that you need to consider limits, and this approach turns into a great introduction to limits.

**What do you think about Massive Open Online Courses (MOOCs)?**

I think it's a very interesting development, and I think it depends on the details of how they work. I listened to a presentation by Professor Djorgovski who taught cosmology last year. He said that he had 5 students in his Caltech class, and 50,000 on Coursera, about 5,000 of whom took it seriously. That's a remarkable scale, but on the other hand, Coursera puts limitations on how you can teach. As I understand, the online lectures had to be in 15 minute chunks, which can be quite limiting. For example, I couldn't teach Ma1a in 15 minute chunks – my lectures really have a beginning, middle, and end, which requires a full hour. The other real drawback is that the grading is somewhat limited. Because of the scale, it's difficult to have the more involved grading that happens with Caltech problem sets.

**What do you like to do in your free time? What are your hobbies?**

I play chess. I'm not very good at it, but I play a lot, mostly online. They have some really great online chess clubs. I also watch TV and read novels. I'm a really big fan of *Homeland*, which seems slightly cheesy, but I really like it. One of my favorite books is *The Mists of Avalon*, by Marion Zimmer Bradley. It's a version of the Arthurian legends that tries to reinterpret how early English history occurred; basically, how England went from a pagan country to a Christian country. I think the book does that in a really effective way.

## Red Fang releases diverse album *Whales and Leeches*

**NAILEN MATSCHKE**  
Contributing Writer

Portland, Oregon's Red Fang continues the trend of bands like Queens of the Stone Age, Down, and other so-called "stoner rock" or "stoner metal" groups, playing a brand of no-nonsense, hard-hitting, and catchy as hell songs with downright impressive consistency. Sure, it's rough around the edges, but everything they need is there. They have a good mix of energetic vocals, a base in standard rock and southern rock fare, and a flair for unusual riffs—all played as loudly as possible.

Their eponymous 2009 debut album established them as a band that could crank out song after song of quality stoner rock, and was successful both critically and commercially. In hard rock and metal, the riff is king, often more than making up for lackluster vocals (something Guns N' Roses made a career out of).

Red Fang clearly understands this and delivers killer guitar and bass parts in spades. For their 2011 follow-up, *Murder the Mountains*, they opted to expand stylistically, featuring more varied tempos, vocals worth singing along to, more melodic instrumentals that focused less on the delivery of punchy walls

of sound, and utilizing the guitars and bass to create layered grooves that are hard not to nod your head to. They did pretty well, but because their first album was so good after coming out of nowhere, many were left wanting more out of *Murder the Mountains*.

*Whales and Leeches* was released on October 15th of this year, and it feels like the band's goal with this record was to find the happy medium between their first two. For the most part I think they have succeeded, but they've had to make some sacrifices along the way.

The album opens strongly enough with "DOEN," starting off with some ethereal chords and building up into a roaring guitar riff that provides the background for the song's verse. From there, though, it never lets up, and we get three solid minutes of music to mosh to. This isn't a bad thing, but it's not spectacular either. It's definitely an improvement over "Malverde," the painfully slow and repetitive first track off *Murder the Mountains*, but it can't hope to live up to Red Fang's "Prehistoric Dog," a fan favorite to this day.

Next up we have "Blood Like Cream," the lead single from the album, and for good reason. It wastes no time jumping into the middle of everything, with a

snappy drumbeat that provides a strong pulse for the first two-thirds of the song. The guitars and bass have that feel of a sped up, louder Queens of the Stone Age joint. In particular, the verse riff of "Blood Like Cream" is reminiscent of the main riff to Queens of the Stone Age's "My God Is The Sun" from this past summer. "Blood Like Cream" also has some of the most sing-along-able vocals on this album, making it easy to get into and a bit of an earworm.

The next song I really like is "Voices of the Dead." The pre-chorus and chorus have vocals that mesh perfectly with the instrumentals. I couldn't care less about the verse, but those two sections get stuck in my head the minute I think of them. The way the song plays out on the chorus riff and then ends with some big, synchronized open chords and a low, spiteful "watch it die" from the vocals is a small touch but is still nearly shiver-inducing.

One complaint I have about the structure of the album is that "Dawn Rising" and "Failure," the two longest and slowest songs, are consecutive in the middle of the album. On their own, I like them, with the former being a sort of progressive epic featuring Mike Scheidt of YOB providing

contrasting higher-pitched vocals, and the latter being murky and bluesy. Together, though, the album slams on the breaks and nearly grinds to a halt, which is just some poor pacing. After that, the album picks up with the solid, upbeat "1516," the angry "This Animal" (which has some pretty cool riffs), and finally "Every Little Twist," which I really like. It has constant harmonized vocals, instrumental parts that keep the groove going the entire time, and some guitar fills that fit in smoothly in order to create this big, moving stack of sound that carries through the whole thing.

All in all, I think *Whales and Leeches* is a solid effort from Red Fang. They managed to bring back a lot of the epic riffage and angrier, more obnoxious vocals from their debut, helping to keep the album from getting bogged down apart from those two songs in the middle. This makes the album a little less mainstream-friendly than *Murder the Mountains*, but there are still plenty of catchy lyrics to sing along with and cool guitar parts you'll want to hear again.

However, I think that by bringing together the

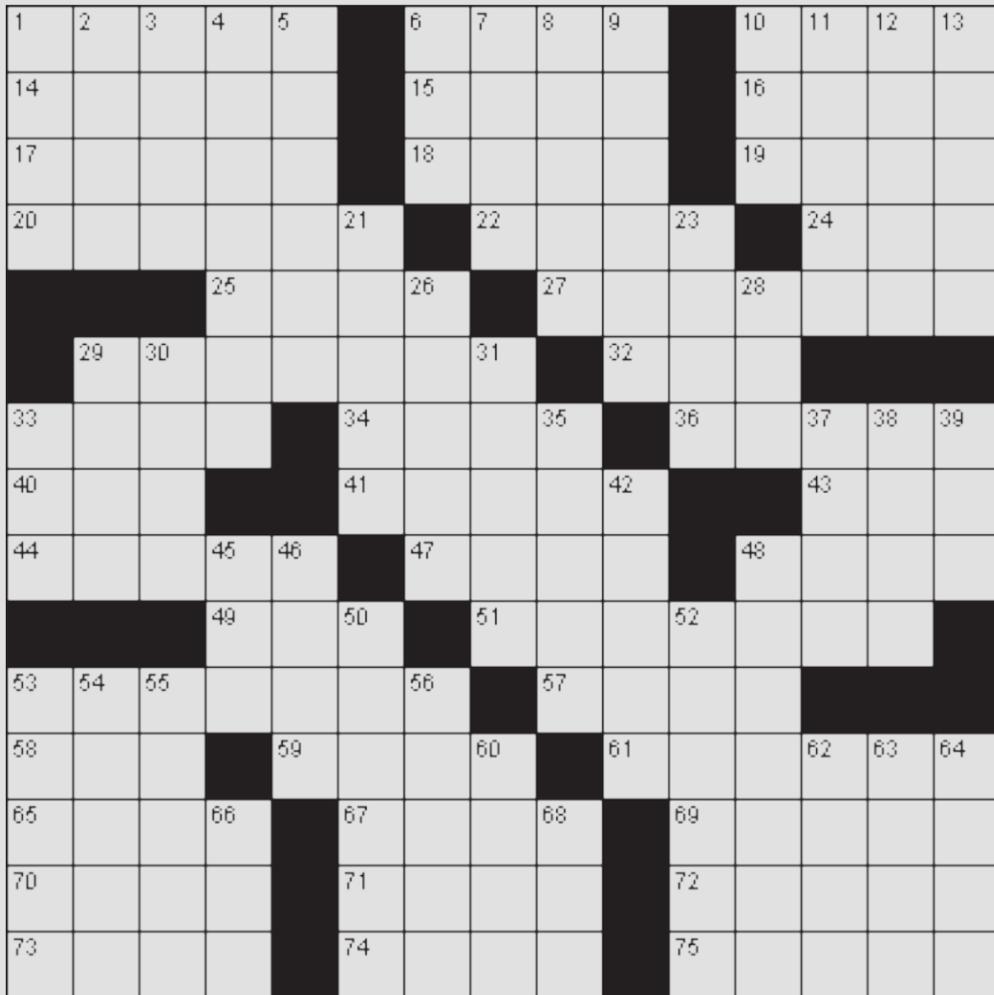
melodic and the heavy-hitting, Red Fang ended up missing the best parts of each. Nothing on *Whales and Leeches* rocks as hard as "Prehistoric Dog" or will get stuck in my head as often as "Wires" and "Hank is Dead" from *Murder the Mountains*. Despite this, *Whales and Leeches* is their most diverse work to date, and successfully introduces several new layers of complexity to their style.

The end result of this is an album without any weak songs, either, and overall I think it's their strongest to date. Anyone who's a fan of the louder acts in rock, and especially metal fans, should at least look up a song or two and see what they think.



-redfang.bandcamp.com

## Today's Puzzle: Crossword



### Across

- 1. Spear
- 6. Misplaced
- 10. Unwanted email
- 14. Fruit of the oak tree
- 15. Part of a foot
- 16. Adjutant
- 17. Yell
- 18. Cat sound
- 19. Secret plan
- 20. Advanced in years
- 22. Spoken
- 24. Mineral
- 25. Mixture of smoke and fog
- 27. Large serving dish
- 29. Motley
- 32. Prevarication
- 33. Unsatisfactory
- 34. Piece of metal money
- 36. Smooth fabric
- 40. Away from home
- 41. Mayhem
- 43. Poem
- 44. Preliminary version
- 47. Large and scholarly book
- 48. Rod
- 49. Anger
- 51. Larval frog or toad
- 53. Trap

- 57. Move rapidly and lightly
- 58. Floor covering
- 59. Baby carriage, in short
- 61. Reuse
- 65. Prejudice
- 67. Matured
- 69. Large artery
- 70. Malevolent
- 71. Rend
- 72. Percipient
- 73. Abnegate
- 74. Showily imitative
- 75. Muscular organ

- 23. Rostrum
- 26. Dwell on with satisfaction
- 28. Beverage
- 29. Rain down
- 30. Scintilla
- 31. Turf
- 33. Seed case
- 35. Wanderer
- 37. Implement
- 38. Not in active use
- 39. Indicating maiden name
- 42. Aromatic wood
- 45. Swimming shoe
- 46. Ambush
- 48. Road surface hazard
- 50. Misprint
- 52. Deliver a sermon
- 53. Implant
- 54. Inexperienced
- 55. Dye
- 56. Avid
- 60. Animal flesh
- 62. Region
- 63. Celestial body
- 64. Male red deer
- 66. Crafty
- 68. Ironic

### Down

- 1. Young girl
- 2. Dull pain
- 3. Midday
- 4. Naval vessel
- 5. Inter
- 6. Part of the mouth
- 7. Burden
- 8. Remnant
- 9. Exhilaration
- 10. Deplete
- 11. Fly a plane
- 12. Worship
- 13. Measuring instrument
- 21. European freshwater fish

[www.puzzlechoice.com]

*Answers to last week's crossword puzzle from puzzlechoice.com*



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# Volleyball triumphs against Mills, Logan sets kill record

## GoCaltech

The Caltech women's volleyball team hosted a pair of matches against Bay Area foe Mills College on Saturday, October 19.

Playing their best and most effective match of the season, the Caltech women's volleyball team swept Mills 3-0 (25-18, 25-9, 25-10) on Saturday afternoon.

The Beavers got a solid hitting performance from Paige Logan.

The senior had a match high 15 kills and a .387 hitting percentage. She also set a personal season high with nine digs.

Just as effective for the Beavers offense was Catherine Jamshidi. She tallied a 10-kill effort on 15 swings with just one error (.600 hitting percentage). Rebekah Kitto and Connie Hsueh each chipped in five kills. Rachel Hess dished out 31 of the team's 34 assists.

As a team, the Beavers had 37 kills in helping them compile a season best .478 hitting percentage.

In addition to their offensive exploits, the Beavers recorded a season high 11 service aces.

During the day's second match, again against Mills College, the two teams went back and forth throughout but the Beavers came away with a 3-0 (25-15, 28-26, 25-21) win.

Logan set a school record of 22 kills to aid in the Beavers cause. Earlier this season she set the Institute mark for kills in a career.

The first set saw the Beavers serve well as they served four aces and tallied 12 kills en route to the opening set win. The home team never trailed in the stanza. In an exciting second set the Beaver responded with a rally late in the frame.

Down 24-22, the Beavers won three straight points to gain their first set point. On Caltech's third set point they converted as they took a commanding lead in the match.

Caltech rallied late in the final set to pull out the win in three set. With the frame tied at 20-20 the Beavers rode solid serving from Lisa Lee and got a big kill from Logan to seal the win.



Senior Rachel Hess contributes to the Beavers' win against Mills College by dishing out 31 of the game's 34 assists.

-gocaltech.com

## Weekly Scoreboard

Men's Soccer  
at Whittier  
L, 5-0 Final

Women's Volleyball  
vs. Claremont-M-S  
L, 3-0 Final

Men's Soccer  
vs. Chapman  
L, 7-0 Final

Women's Volleyball  
at Occidental  
L, 3-0 Final

## Social Science Experimental Laboratory Caltech

[ssel.caltech.edu](http://ssel.caltech.edu)

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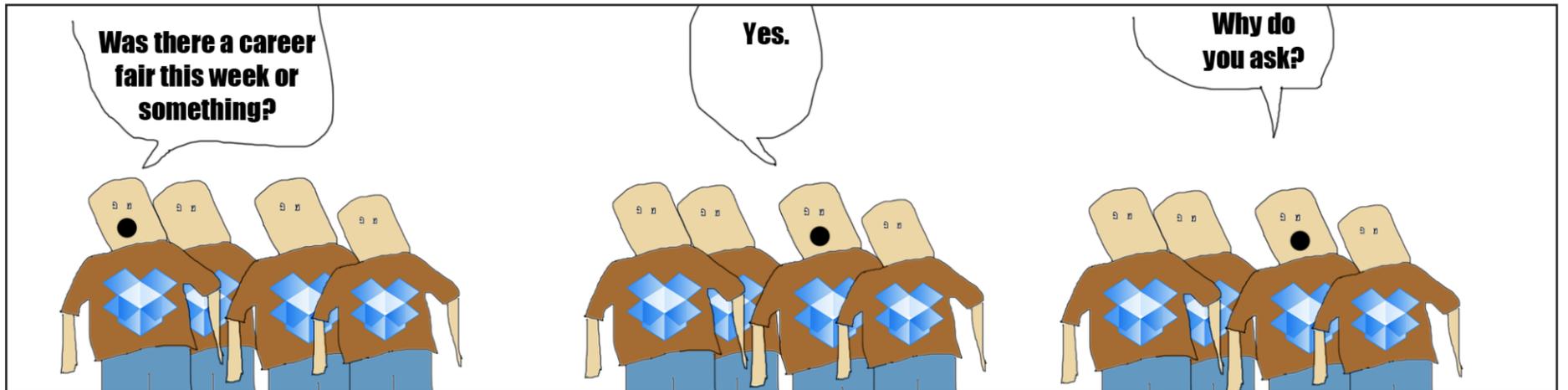
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3. **Attend** the experiment and **GET PAID CASH**

SSEL is located in Baxter 5

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## Acquired Taste

Dr. Z



## Unoriginal Jokes

Kerry Betz



*For more photos, videos, and archives of previous issues, check out the Tech website!*

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