



Caltech welcomes Professor Frederick Eberhardt

JONATHAN LIU
ARC Representative

Frederick Eberhardt, a professor of philosophy, joined Caltech's faculty in July 2013. He earned his B.S. in philosophy and mathematics from the London School of Economics in 2002 and his M.S. and Ph.D in machine learning and philosophy, respectively, from Carnegie Mellon University in 2005 and 2007. Before arriving at Caltech, Eberhardt was Assistant Professor in the Philosophy-Neuroscience-Psychology (PNP) program and the Department of Philosophy at Washington University in St. Louis.

What sort of research do you do?

I work in causality. In other words, my research deals with figuring out how to identify causal relations from statistical data about correlations, since not every correlation is a causal relation. Now, it's always difficult to give a precise definition of cause, but there are a few things that are relevant to a good definition. One thing is that causation doesn't have to be deterministic. We want to allow for probabilistic causal relations. For example, when we say that smoking causes lung cancer, we don't mean that everyone who smokes will get lung cancer. The other thing is that causal relations support interventions, or manipulations. In the smoking example, for instance, if we run a randomized, controlled trial in

which we manipulate the method of smoking, then we should be able to see an increased risk of lung cancer. This idea of manipulation and experimentation is central to causality.

In the types of things I work on, the worry is always that the correlations that we see in our data might be due to something completely different, however. For example, maybe smoking and lung cancer are not correlated because smoking causes lung cancer, but because there is some genetic marker that increases both the likelihood of smoking and of lung cancer. In that case, we would have a correlation, but it wouldn't be due to a causal relation between smoking and lung cancer.

That's what I'm interested in: teasing those things apart. I try to develop algorithms that take statistical data sets that we collect in some cross-sectional study and infer from these sets the actual causal relations. This involves a lot of statistics and machine learning, but to a certain extent I think it's still philosophy because it addresses the old fundamental question of what the causal relations are. Specific cases I work on include genetics – trying to find out gene regulatory networks – and other topics.

Do you work on specific cases of causality, or is your research more general?

Definitely more general. What I do is attempt to

develop methodology, finding techniques for which we can



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provide proofs that are guaranteed to identify certain things under a given set of assumptions. So, often the task is to identify a set of assumptions that is plausible in a particular context, and then attempt to find a procedure that identifies a causal relation.

Once we've got that, then other people use these techniques in fields such as protein signaling, neuroscience, or even climate science.

So your work must be very mathematical, then?

Yes, a lot of it is very mathematical. In many cases, we know that the proofs are extremely complicated and that they can't be done easily, so we have to resort to large-scale simulations, either because the problem is not tractable in closed form, or because it has too many cases.

Then, we have to make do with what large computer simulations tell us.

Do you mind sharing one of the methods that has been developed in your field?

One of the earliest methods developed is the so-called PC algorithm, named after its authors [Peter Spirtes and Clark Glymour]. It's a very simple algorithm that is based on conditional independence tests that you run on a set of variables. It iteratively goes through the different possible conditional independences and dependences and tries to identify the causal structure amongst the set of variables. The details are perhaps a bit complicated, but ultimately the outputs are a set of candidate causal structures that are consistent with the data. What's interesting about it, I think, is that it doesn't return a unique causal structure, because a unique causal structure can often not be determined. You have to accept that there's an equivalence class of structures which are consistent with the data you have observed, and so that's what this type of procedure does: it returns an equivalence class of causal structures given an input data set and a set of assumptions about the presence of feedback and unmeasured common causes.

Why did you choose to come to Caltech?

There are a variety of reasons. The teaching load is relatively low here, so I get to do some teaching, but I also get a fair amount of time to do my research, and that is certainly valuable. The other thing, perhaps the most important, is that I'm not as bound here when it comes to issues of evaluation of my work. For example, there is

less of a need to show that I have done well in philosophy – that I have published in philosophy, or that all my research activities have gone specifically into philosophy. Rather, here, my impression is that if I publish in machine learning, psychology, statistics, or somewhere else, people will say, "Great, that's wonderful!" and it won't matter that it's not in philosophy. I think if you have a more traditional philosophy department in a more traditional university, it will often be the case that there will be a fair amount of pressure to evaluate how much a faculty member has published in their own specific field. As a result, interdisciplinary work, or collaborative work with other areas, will not be valued as highly. That was one of the big reasons why I think that Caltech provided an opportunity that I didn't have elsewhere.

What courses do you teach at Caltech? How has your teaching experience been so far?

At the moment, I teach two sections of Knowledge and Reality, an intro philosophy and freshman humanities course. I was very curious about how it would go, because the expectation, of course, was that Caltech students are not your normal students – that they would be technically much more sophisticated, but perhaps weaker on the humanities side of things. So the question was, am I going to teach a standard intro course in philosophy, a class that questions the foundations of what students learn here in their other courses, or maybe a class that is supposed to be kind of a counterbalance to their everyday scientific education?

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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*

- Yemen tries terrorists** **9** suspected al-Qaeda members accused of trying to kill the president [BBC]
- Church mural uncovered** **60** years after being hidden, it's unveiled at St. Peter's Chelsea church [CNN]
- Miss Universe Crowned** **86** contestants competed and Venezuelan Gabriela Isler won the title [TIME]
- Gay marriage approved** **15**th state to do so, Illinois approved gay marriage when bill passed [TIME]
- US wants compensation** **\$864M** sought by govt. from Bank of America in mortgage trial [BBC]
- Refugees to be sent home** **500k** refugees in Kenya may be sent home, though Somalia is unsafe [BBC]
- Typhoon turns deadly** **10,000** are said to have died due to Typhoon Haiyan in Philippines [BBC]

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*

The California Tech

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

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Jonathan Schor
Stanford Schor

News Editors
Neera Shah
Nehaly Shah

Photography Editor
Alex Hsu

Staff
Brad Chattergoon
Malvika Verma

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ASCIT Minutes

ASCIT Board of Directors Meeting
Minutes for November 6, 2013. Taken by Catherine Jamshidi

Officers Present: Zach Rivkin, Connor Coley, Malvika Verma, Connie Hsueh, Monica Enlow, Michelle Tang, Catherine Jamshidi

Guests: Connor Rosen, Margaret Lee

Call to Order: 10:10pm

President's Report (Zach):

- There was an open UHCC Meeting Thursday night where students had a chance to voice their concerns. Major discussion points of the meeting included frustration over unclear course collaboration policies, marking transcripts of students returning from academic leave, inviting faculty members to House dinners, and a philosophical discussion of protection vs. punishment of the community.
- There was a presentation to the Development and Institute Relations team by Zach Rivkin, Julie Jester, and Tom Mannion that focused on what makes the undergraduate experience at Caltech so unique
- Zach will be presenting to the Faculty Board this week on the following:
 - o Status and potential improvements to the Counseling Center
 - o Recent changes to athletics, both in terms of varsity sports and physical education curricula
 - o The role of student representatives on the Freshman Admissions Committee

Officer's Reports:

- **V.P. of Academic Affairs (ARC Chair: Malvika):**
 - o Malvika and Connor Rosen will be presenting to the Faculty Board about Undergraduate Research to consist of the following:
 - o Ways to engage students in research via attending seminars frosh year, starting their SURF early, requiring academic-year research, and working with Option Representatives to allow course schedules to be less rigid and make academic-year research a viable option
 - o If you have examples of unclear collaboration policies, tell your ARC rep or email it to Hannah Klion (hklion@caltech.edu).
 - o We are discussing how to appropriately unit courses (especially those which are significantly underunited)
 - o Make sure you meet with your option mentor/mentee
- **V.P. of Non-Academic Affairs (IHC Chair: Connor):**
 - o I'm working on ways to improve the wireless infrastructure in the Houses.
 - o Any Student Life and Housing Committee Concerns should be shared with Connor Coley or Justin Koch
 - o Working on improving student involvement in freshman admissions
 - o If you have specific suggestions on how to improve the Leadership Conference, let any member of the IHC know.
- **Director of Operations (Connie):**
 - o Club Registration is still moving smoothly.
- **Treasurer (Monica):**
 - o We are still allocating money following Club Funding Requests; email notices will be sent out later this week.
- **Social Director (Michelle):**
 - o The Rathskeller event last Friday night was well-attended.
 - o Michelle is planning an event for this upcoming Friday and looking into possible off-campus events.
- **Secretary (Cat):**
 - o Thank you to everyone that responded to the Student Experience Committee Survey!!
 - o Connor Rosen and I will be reading through all of the survey responses this week and have more information at a later time.
 - o As of now we're expecting to send out a follow-up survey asking students to rank the recommended changes in a preferential order.
 - o Students are more in favor of having town-hall meetings within their house to discuss the questions raised by the Trustees; this will likely begin next term.

If anyone has any questions or concerns about a section of the minutes please email the appropriate officer. We are happy to answer any questions.

Meeting Adjourned: 10:58pm

Last week's ASCIT Minutes*

*(Since *The California Tech* was not published last week)

ASCIT Board of Directors Meeting
Minutes taken for October 30, 2013. Taken by Catherine Jamshidi

Officers Present: Connor Coley, Zach Rivkin, Malvika Verma, Connie Hsueh, Michelle Tang, Monica Enlow

Guests: Connor Rosen, Margaret Lee

Call to Order: 10:07pm

President's Report (Zach):

- The Representatives to the Student Experience Committee have brought back questions from the Trustees
 - o Fill out the survey
 - o Town-hall style meetings will occur following the survey - stay tuned!
- Looking into ways to increase awareness and variety of healthy food options
- Will be presenting to the Faculty Board on undergraduate research and mental health

Officer's Reports:

- **V.P. of Academic Affairs (ARC Chair: Malvika):**
 - o Will be presenting to the Faculty Board on Undergraduate Research
 - o There will be an open UHCC (Undergraduate Honor Code Committee) meeting this Thursday (Nov 7th); look for more information via email
 - o If you're an option mentor, take your mentees out for froyo this term and get reimbursed
 - o Talk to your ombudsperson if you have concerns in a class so he/she can pass along feedback
- **V.P. of Non-Academic Affairs (IHC Chair: Connor):**
 - o The IHC, with help from others, is putting together a comprehensive document detailing the current House system and potential plans for its expansion (i.e. Bechtel). If you would like to help with this process, please contact ihc@ugcs.caltech.edu
 - o Any Student Life and Housing Committee Concerns should be shared with Connor Coley or Justin Koch
 - o If you have specific suggestions on how to improve the Leadership Conference, let any member of the IHC know.
- **Director of Operations (Connie):**
 - o Club Approval is still ongoing. If your club was not approved and you have questions about it, please don't hesitate to contact me at operations@donut.caltech.edu
 - o The Club Funding Application has been sent out via email; Club Funding Day is this Sunday (Nov 10th) and all clubs must pre-register for time slots
 - o Little Ts have been distributed to the houses
- **Treasurer (Monica):**
 - o Nothing to report this week
- **Social Director (Michelle):**
 - o The pumpkin carving contests results are as follows: (1) Page; (2) Avery; (3) Ruddock, Dabney, Ricketts
 - o The winner (Page) gets a dinner courtesy of Tom Mannion
 - o There will be a Rathskeller event this Friday (Nov 8th)
- **Secretary (Cat):**
 - o Fill out the Student Experience Committee Survey!!!
 - o You have until this Thursday Nov 7th, at 11:59pm
 - o I've updated several committees on Donut: Check http://donut.caltech.edu/ascit/Committee_Representatives for a list of all current Committee Representatives

If anyone has any questions or concerns about a section of the minutes, please email the appropriate officer. We are happy to answer any questions.

Meeting Adjourned: 10:56 pm

ARC gets to know Professor Eberhardt

JONATHAN LIU
ARC Representative

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For example, I could go into topics on which we don't have such a good grip scientifically, like free will or consciousness. Anyway, I decided to take a kind of mixed approach of those different considerations. It's been going rather well, I think. Part of what's nice about a freshman course is that people come in with lots of enthusiasm; they have generally not seen much in terms of philosophy before, and so one can go through a lot of different questions and just explore them and see how they work out.

Also, the class size is only 15, which means that one can really discuss quite a bit with the class. It does require quite a bit of reading, though, and so once the pressure from the other courses piles on, the reading tends to slack off a bit. However, I think it's been really productive so far, and I've been very happy with my experiences teaching at Caltech.

What do you like to do in your free time?

I have a young son, so he keeps me quite busy for the rest of the time that I don't spend in the office. I really like traveling, and perhaps that's what I miss the most now since I've had my son - he's still under a year old at the moment. I used to travel an enormous amount, especially in places that involved traveling with a backpack in a rickety bus somewhere in a faraway country. I really, really enjoy that, and I miss it a little bit.

What sort of places have you been to?

Perhaps one of the most interesting trips I went on was to Central Asia. I was very keen to travel to the cities of the Silk Road: in Uzbekistan, Tajikistan, Kyrgistan, and so on. So, with a couple of friends, I spent three weeks traveling through those areas. They really are fascinating places, and not all of them were easy to travel through. I enjoy that type of thing a lot, but these days I don't get to do as much of that as I would like to. But just in the surroundings of Los Angeles there are plenty of outdoor activities, and that's something I hope to be able to enjoy quite a bit in the future.

Caltech Y Column: New events

**PHOEBE ANN
LAURA SANTOSO**
Contributing Writers

Hi everyone! Hope you did well on your midterms. Now that you have more free time, why not participate in or lead some Y events?

Upcoming Events:

1. Ice Cream Competition!
The Caltech Y is hosting a Fosselman's Ice Cream Competition between the houses, sponsored by Tom Mannion! The winner will get their ice cream flavor featured at CDS dinners in addition to \$2000 for the house retreat fund. The other semifinalist will win \$1000, and there will be additional prizes from the Caltech Y.
For the competition, each house (through their ExComm) will submit one recipe to the Caltech Y by November 17. There will be two semifinal competitions taking place at the Caltech Y house (505 S. Wilson Ave); the first is between the North Houses (Avery, Lloyd, Page, and Ruddock) on Sunday, December 1st, and the second is between the South Houses (Blacker, Dabney, Fleming, and Ricketts) on Wednesday, December 4th. Winners will be decided by popular vote but the finer points are still being worked out.
2. Girl Power in Thailand
Monday| Nov. 11 | 12:00 pm | Center for Diversity, Center for Student Services 2nd Floor
Janani Mandayam Comar, undergraduate recipient of the Caltech Y Advocating Change Together (ACT) Award, discusses the impact of tutoring science and English at a shelter for girls in Thailand. Moderated by Portia Harris of the Center for Diversity. Lunch provided for the first 40. No RSVP necessary.
3. Clean Air: A Science Policy Series Discussion with Professor John Seinfeld
Tuesday|Nov. 12| 11:30-1:00 pm| RSVP necessary
Lunch is provided, space is limited (priority will be given to students)
John H. Seinfeld is the Louis E. Nohl professor of Chemical Engineering. Known for his work in advancing the understanding of the effect of atmospheric aerosols on earth's climate, he has been recognized by the Allan P. Colburn Award from the American Institute of Chemical Engineers (1976), NASA Public Service Award (1980), and the Haagen-Smit Clean Air Award from the State of California Air Resources Board (2003). After a brief overview of his experiences in environmental science policy, we will have a Q and A discussion with the speaker.

4. Science Policy and Diplomacy With Dr. William Colglazier
Thursday|Nov. 14th| 12:00 -1:30 pm| RSVP necessary

Lunch is provided, space is limited (priority will be given to students)

In 2011 Dr. William Colglazier was appointed the 4th Science and Technology Adviser to the Secretary of State, serving first under Secretary Clinton and now under Secretary Kerry. He helps to identify and evaluate emerging scientific and technical issues that affect U.S. strategic interests, brings scientific expertise to the Department and helps to promote scientific and technological capacity-building and science-based policymaking internationally.

5. Caltech Y Life Skills Series: Nutrition Life Skills

Thursday| November 21st| 5:30 pm| RSVP for Lisa Gilmore, a registered dietitian, will be talking to us about good nutritional practices. Snacks will be provided. If you're interested, please RSVP at <http://goo.gl/9JtvRE>. The Caltech Y Life Skills Series strives to give students the skills necessary to thrive in the world outside the ivory tower.

6. Outdoor Adventures T-Shirt Design Contest
Deadline Friday, November 15th

The Caltech Y Outdoor Adventures group is designing and printing custom T-shirts to wear when hiking, having fun outdoors, or even for daily use around campus. The creator of the winning design will get a free T-shirt and a \$25 discount on the Caltech Y Outdoor Adventures camping trip of their choice (good for trips to Yosemite, the Grand Canyon, and other National and State Parks). Submit your design in .pdf or .ai form to Jeremy Sandler, jsandler@caltech.edu by Friday, November 15th.

7. Sandstone Peak Day Hike
Sunday|November 17th|8:00 am to 3:00 pm (depending on traffic)|RSVP necessary

Caltech Y Outdoors will be leading a hike to Sandstone Peak in the Santa Monica Mountains above Malibu. This easy to moderate 6-mile loop hike provides panoramic views of the Pacific Ocean and Santa Monica Mountains. Email jsandler@caltech.edu or wfrankla@caltech.edu if you have questions.

If you have any questions at all, feel free to contact the Caltech Y at caltechy@caltech.edu. Feel free to drop by at one of our weekly meetings at the Caltech Y at the Caltech Y (505 S. Wilson, next to CEFCU), Mondays at noon. Lunch is provided.

Review of *Ender's Game*: Carry on my wayward son

SHANNON WANG
Contributing Writer

Spoiler Alert: The entire movie is spoiled in this review, so if you haven't watched this movie yet but plan on doing so in the near future, turn back now.

Most of the *Ender's Game* reviews circulating the internet are furious debates comparing the film to the book; the rest are in-depth analyses on whether the film's graphics are sufficiently magnificent, or if they still pale in comparison to *Gravity's* visual effects. This review doesn't do any of the above.

This review is about Ender Wiggins the tragic hero, why his road to martyrdom is supposed to reduce us into weeping messes, and how exactly the movie accomplishes this.

Ender's Game isn't the typical story about the reluctant hero and his journey – no, it's about the tragic hero turned wandering martyr. It's about the hero whose clarity of purpose has been muddled, the hero who unintentionally betrays his cause even as he serves it, the hero who has no other path because his fatal flaw isn't a choice — it's a consequence of circumstances.

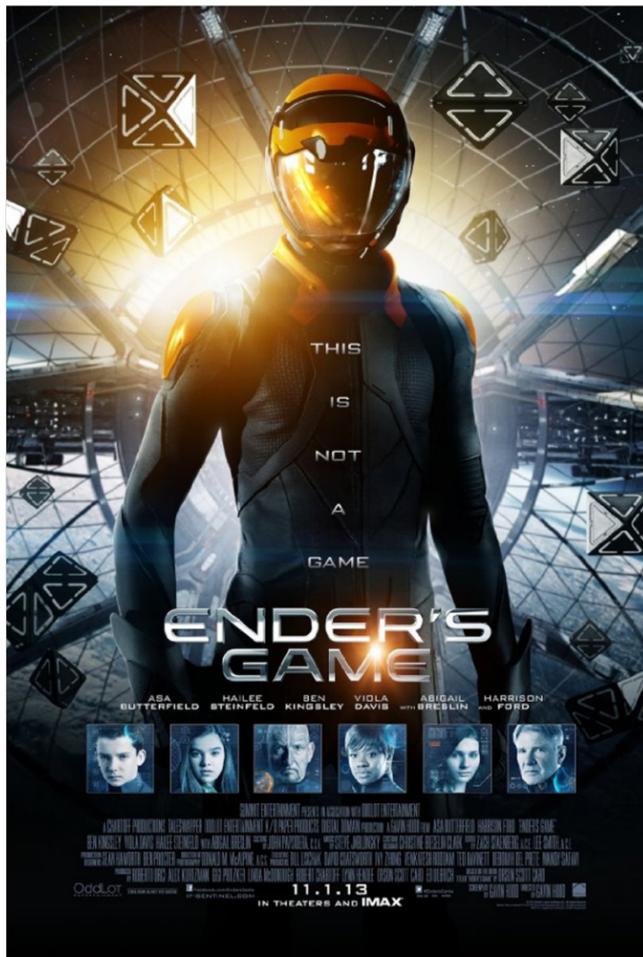
He's the devout disciple who seeks guidance from an absent god; he's the scapegoat and the martyr for humanity's crimes because he was the tool used to inflict

those crimes. And we the audience must see Ender as this hero if we're to feel the tragedy; we must feel the lack of choices and inevitability of violence as intensely as Ender does, so that we will mourn his innocence when it is lost.

The film doesn't pull its punches — we are made to feel every bit of Ender's pain and loss. We feel his innocence keenly at the start — we see it in the way Ender neatly separates the world into good and bad, humans and Buggers, black and white.

He has a cause: save the world, bring honor to his family, and protect his sister. He has a religion: there is good in the world and it is in Valentine, his sister. She alone is enough to make killing and isolation worth it.

He has a purpose: he's a hero and eventually he will command the forces that will bring peace to earth. We fall in love with him for his ambition, his tactical genius, and his desire to be *good* even when we know that these traits are his undoing in the end.



-imdb.com

And so we hold our breath as Ender's cause grows riddled with doubts. We despair with him when violence becomes unending and purposeless, when it's clear that he is nothing but a weapon Graff wields, and when his communications are blocked and all he gets from

intentions were good; we know this tragedy was inevitable.

Put simply, we know this story. We recognize Ender as Orestes without Pylades, or as Odysseus without an end in sight, except we know that he's even more tragic than his precedents, because his

Valentine is radio silence. If his sister is his moral compass, then Ender is lost at sea without a navigator. And how can we expect Ender to be his own navigator when he is lied to and manipulated at every turn? How can we ask him to be *good* when morality only exists when choices do? This is why we can't blame him even as we watch him blast a planet into smithereens; we weep for him because we see him tricked, cajoled, urged, and forced into the massacre. We know his

fatal flaw isn't pride, obsession, wrath, or any deadly sin. His flaw is that he was born to be a killing machine in an apocalyptic situation. His flaw is that he was born in a world that only speaks the language of necessary evils. And we are taught this language in the movie.

We learn every desperate, messy, violent word. We hear it as circumstances rob Ender of autonomy; we read it in every decision, emotion, action he takes. Ender *needs* to join the academy. He *has* to prove his worth as a third child. He *must* use violence. He *has* to win the war. He *must* protect his sister. He *needs* to kill. He *has* to ensure peace. There's success and then there's failure and there's no in-between. We're made to understand this dichotomy. We're forced into fluency in this language; we know it so well at the end that we're not surprised that he *has* to destroy the planet and that he *must* atone.

And that is why the movie is a success. It tells us the truth that we can't handle — there is no peace for our heroes. There is only the path to martyrdom if they desire redemption. The movie shatters fairy tales, exposes humanity's violent needs, and shows us what we do to our heroes — we scapegoat and crucify them. There is nothing but brutal honesty in this movie, and that is why we will remember it.

Brad/Chad Couture: Trainer Edition - Gym Couture Part 1

BRAD CHATTERGOON
Staff Writer

Lately, to my pleasant surprise, there has been an upsurge in the number of us Caltech undergrads taking health and fitness seriously.

Yes, I've noticed you at the weight room more often, I've seen you learning how to be a backup dancer in a hip-hop video, and getting your groove on doing some Zumba.

More importantly, I've been noticing what you've been wearing: It's been mostly yoga pants, in case anyone was curious.

In the spirit of trying to get more people into the gym (but not too much more, I don't want to wait an hour to use the squat rack), here is an article on what items you should have before you start sweating it out at the gym.

1.) Deodorant. I think this is self-explanatory but I need to mention it because I've been to the gym at peak cardio times and it's not pleasant. Always be aware of your personal hygiene at while working out, because even if you aren't, the people within a 5 meter radius of you are. Oh, is there no one within a 5 meter



Junior Harrison Miller flexes in his tank top, showing the haters exactly what a working man looks like. Clearly, his arms fall under the category of "so large."

-Stanford Schor

radius of you? Yeah I wonder why...

2.) Tee-shirt. No one wants any barebacked bodies at the gym. Trust me, I've tried and boy do I now know what it feels like to be objectified. I jest, but really though, here are some tops to consider.

The classic cotton tee. These are the go to item for working out and has been around ever since. There are alternatives that are better designed to deal with all the sweating that you'll be doing but they do tend to be a bit more costly. If you do opt for a cotton tee, try to keep on the lighter side to help keep it from getting sticky and weighing you down. I'm also a big fan of bright colors but most gym rats tend to stick to black, grey and white.

Dri-fit tees. These are the optimal work-out shirt. The technology that goes into making them is

designed to wick sweat away from your body, helping to keep it cool and dry.

It usually also is designed to help manage odor problems, see (1). These come in two general types: Standard training tee and Compression tee.

The standard tee fits about the same as a cotton tee would whereas the compression tee, as the name suggests, is much tighter and adheres strongly to the body. I find compression tees feel better for lifting but it also prints out the entire upper anatomy so if you are self-conscious about not having that six-pack yet, it might be better to stick to the standard tee.

Tank-tops. These are the favorite among the ladies from what I've seen, especially in dri-fit fabric, and they definitely grab attention when worn in a bright color.

They are also fairly popular, in cotton fabric and non-neutral colors, among the big dudes at the gym. For the guys, I recommend using these only if your arms are getting so large that wearing a standard tee is uncomfortable. Try to avoid white if you're a dude, no one wants to think that you're a wife-beater.

Check back next week for information on pants, shoes, and more.

From a Caltech alum: Seven steps to a stronger community

CHRIS KOLNER
Caltech Alumnus

Caltech currently faces an identity crisis. The undergraduate culture here has a long, storied history of fostering the sort of creativity and free-spirited thinking which encourage Caltech alumni to challenge both themselves and generally accepted wisdoms, and has for many years made this school the breeding ground for the next generation of great minds, scientists and engineers alike. Not lightly have our graduate and undergraduate programs combined to produce eighteen Nobel laureates, and one Fields medalist. Caltech alumni have shaped the face of the modern world, from inventing the semiconductor transistor to walking on the Moon.

This success has been due in part to Caltech's unique atmosphere and approach to education. Caltech has not been afraid to challenge its students with the most difficult curriculums in the world. The small student-to-faculty ratio of 3:1 encourages undergraduates to interact one-on-one with famous scientists (our professors), an opportunity that is almost universally afforded to Caltech students and something that makes this institution unique. Our intimate community has also given rise to the Honor Code, famous not only for the liberties which it affords students, but also for the unshakable sense of ethics it imparts on every Caltech alumnus. Students learn and grow in a community where they are treated as equals, where they can trust in each other, and where they can enjoy the trust of their teachers and mentors.

But this most critical ingredient to Caltech's success story – the strong bonds of trust within the community – has been gravely damaged in recent years. An increasingly vocal number of alumni have taken notice, and have expressed their dismay through open letters and editorials. I could not possibly list everything that has gone wrong over the past five years in one short editorial, so if you are not familiar with these recent events, I suggest reading the poignantly painful letters authored by alumni such as Ilya Nepomnyashchiy,

Chandra Barnett, and Isaac Sheff. Their letters have been received by a swell of sympathetic outrage from fellow alumni on Facebook. In short, they detail how the trust between students and Caltech administrators has been sorely wounded. The Deans have grown increasingly authoritarian, asking not whether actions are morally wrong, but whether they violate Institute policies – policies which have been continually revised to become more and more draconian.

The students' respect for the administration is all but gone, replaced by a deeply adversarial relationship. It is the sort of relationship experienced by people who have no respect for a set of overly restrictive rules with

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The real truth is that a recovery will be gradual, represented more by changes in attitudes than by concrete milestones.

”

which they are compelled by force to comply. In practice, the wrong becomes not breaking a rule, but getting *caught* – for when students see rules enforced to the letter with no respect for whether anyone was actually hurt, what reason do they have to respect those rules? And for that, the Honor Code has suffered. The idea that life at Caltech can be governed by a single, simple principle of fairness and moral conduct is being drowned out by pages upon pages of new regulations and restrictions – such as the laughable Caltech Code of Conduct, a comparatively Byzantine set of eleven rules and accompanying clarifications which, apparently, ranks striving for excellence above acting with integrity. Students are now told they are untrustworthy children in need of constant supervision, and they are only too happy to oblige, meeting that expectation and freeing themselves from the bonds of personal responsibility.

Of late, however, there has been much discussion of what is wrong with Caltech and little of

how to fix things. The real truth is that a recovery will be gradual, represented more by changes in attitudes than by concrete milestones. But, in the interest of giving us concerned alumni a path to change, I have worked to identify seven goals which might be reached along such a path. These seven things represent changes which are neither trivial nor impossible. They represent real concessions to the students and a real departure from the current path. But at the same time, they are not as drastic as some demands that have been made (like the current calls for the resignations of Deans Kiewiet and Nye) and represent things that I think ought to clearly be in the interests of everyone in the Caltech

effect answered in the negative, a reasonable person who hasn't listened to rumors on the street or gone out of their way to seek an explicit response would not be able to conclude such. The situation has been further complicated by other employees of the Institute making further vague comments about the situation, such as Bridget McKay in the Development Office, who stated, “There were strong concerns about student safety and well-being.

And that continues to be the case – the silence is to protect students from serious legal consequences that could arise should information become public. Should a single occurrence in undergraduate school follow a

such an action would help to dispel the aura of “secret tribunals” which has sadly tarnished the entire affair.

2. Student readers should be restored to the Freshman Admissions Committee.

When I applied to Caltech, I did not know current students would be reading my application. When I found out, I admit I was surprised. Ultimately, however, that fact made me appreciate the unique approach Caltech takes to education.

As future scientists, Caltech students will spend the rest of their lives having their resumes and research reviewed by their peers. The most fortunate might have colleagues make nominations to prize committees, where even more fellow scientists will see the details of their careers and debate their merits.

Why should it be so unthinkable that this process might start at the undergraduate level? Caltech undergraduates have the best perspective as to what sort of applicant is most likely to succeed among them.

The wisdom they bring to the table in an admissions committee cannot be substituted – an admissions decision which does not involve student input is a less informed decision than one that does. Removing students from the committee sends them a simple, damaging message: you are children, you are not competent, and we do not trust you to make decisions about your future and the future of the Institute.

From talking to fellow alumni who had the honor of serving on the admissions committee, I have much anecdotal evidence of student input being quite valuable, and to my knowledge there have been no systematic problems involving the student readers during the years which they were present. So, to the Faculty Board, please do the right thing and restore the undergraduate voice to the admissions process.

This editorial is being published in the format of a three-piece series. The second and third parts will be published in the following issues of the Tech. The final part will include a link to the full text of the editorial online.

community. How might we fight for them? That I will address at the end, but first a list of positive changes we can push to enact:

1. The administration should make a clear, public statement about the Ricketts incident.

This point is almost sadly outdated, a relic of the fact I began this article in May. But most unfortunately, that is not because the administration has said anything. The only statement ever issued by the administration stated that it involved “incidents that violate Institute policy ... of egregious nature”.

Such a statement is so vague as to border on absurdity. If there have been violations on a scale which necessitates publicly announcing their existence and taking disciplinary action against one-eighth of the student body, the community at large is owed a better explanation. At another school, such a statement might imply something like serial rape or violent sexual harassment. While I have seen private queries to this

student for the rest of their life? In many ways, this is upholding the honor code, just from a different perspective.”

For the sake of consistency, we the community are owed a statement from the Deans or the Vice President of Student Affairs clarifying the Ricketts situation. Obviously, many details cannot be disclosed for privacy reasons, but there are many questions which can be answered.

Did the House officially condone activities which violated Institute policy, or was it the actions of select individuals in the House? Were there any actions by students that pose an active harm to the community, such as rape or physical violence?

To what degree did the history of Ricketts with the administration impact their decision to try to change the house from the top down? These are the sort of questions to which many answers are available as rumors on the street, but which ought to be directly addressed by the people in charge of the situation. I think that

NOMINATE YOUR FAVORITE PROFESSOR FOR THE FEYNMAN TEACHING PRIZE!

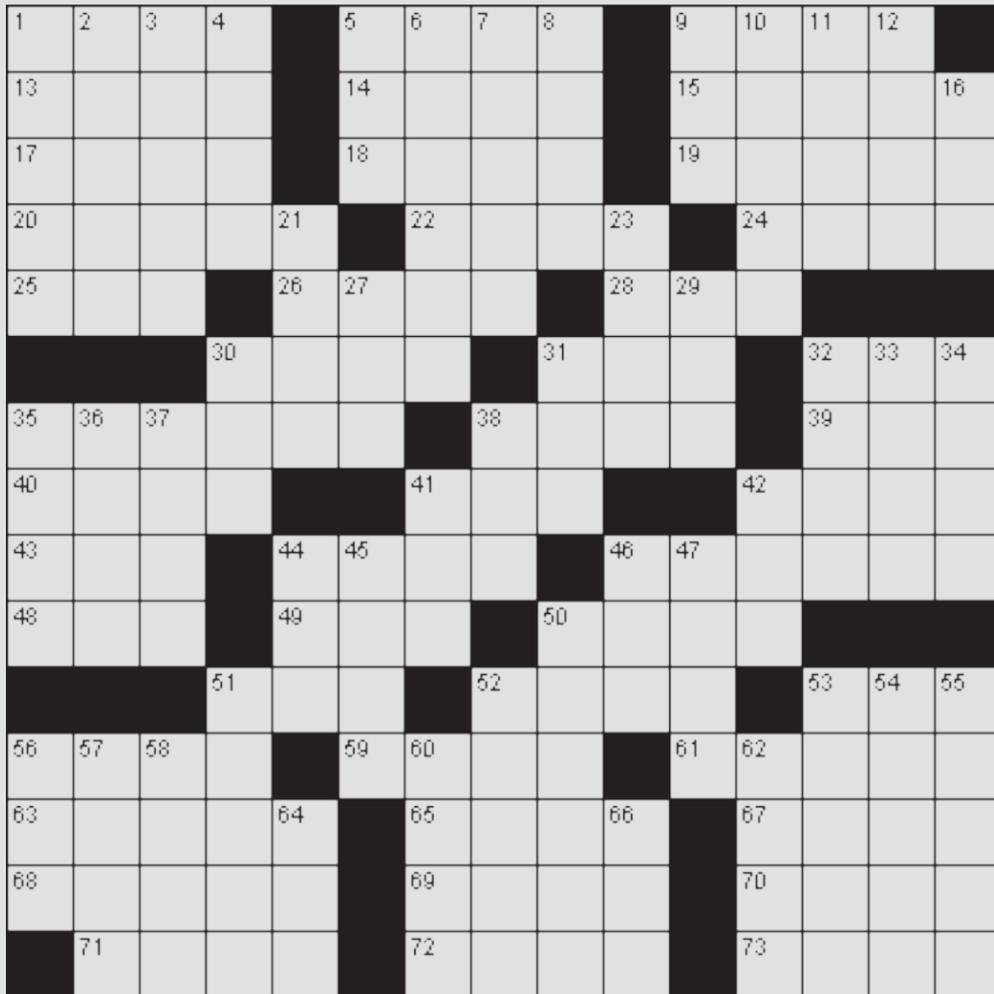
Here's your chance to nominate your favorite professor for the 2013-14 Richard P. Feynman Prize for Excellence in Teaching! You have from now until January 2, 2014 to submit your nomination package to the Provost's Office to honor a professor who demonstrates, in the broadest sense, unusual ability, 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 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/FeynmanTeaching-Prize>. Further information can also be obtained from Karen Kerbs (626-395-6039; kkerbs@caltech.edu) in the Provost's Office.

Today's Puzzle: Crossword



[www.puzzlechoice.com]

Across

- 1. Vespid
- 5. Reverberation
- 9. Ego
- 13. Singing voice
- 14. Metric unit of weight
- 15. Type of fold
- 17. Painful
- 18. Elasticity
- 19. Let up
- 20. Digit
- 22. Ancient Chinese dynasty
- 24. Overt
- 25. Consume
- 26. Heroic poem
- 28. Jurisprudence
- 30. Rostrum
- 31. Relatively small indefinite number
- 32. Watch pocket
- 35. Financial gain
- 38. Part of a shoe
- 39. Self
- 40. Open river valley
- 41. Fish eggs
- 42. European currency
- 43. Prevaricate
- 44. Highly excited
- 46. Bicycle for two
- 48. Fairy
- 49. Flop
- 50. Domestic help

- 51. Ancient Roman god
- 52. Small lake
- 53. Angry dispute
- 56. Festivity
- 59. Cross a river where shallow
- 61. Era
- 63. Circular coral island
- 65. Perspective
- 67. Notion
- 68. Figure out
- 69. Unit of area
- 70. River duck
- 71. Supplication
- 72. Give temporarily
- 73. Sharpen

- 23. Merriment
- 27. Bakery item
- 29. Hole punch
- 30. Female deer
- 31. Professional charge
- 32. Bitter quarrel between two parties
- 33. Fiend
- 34. State of economic prosperity
- 35. Not in active use
- 36. Metal fastener
- 37. Musical notation
- 38. Domestic swine
- 41. Pole
- 42. Conclusion
- 44. Fuss
- 45. Deep wide chasm
- 46. Bronze
- 47. Assistant
- 50. Innovative
- 51. Balm
- 52. Monetary value
- 53. Cowboy show
- 54. Large body of water
- 55. Marine mammal
- 56. Fuel
- 57. At the summit
- 58. Be lazy or idle
- 60. Ellipse
- 62. Plant tissue
- 64. Pasture
- 66. Married

Down

- 1. Squander
- 2. Hawaiian greeting
- 3. Swagger
- 4. Verse
- 5. Contains albumen
- 6. Crucial stage or turning point
- 7. Mayhem
- 8. Portent
- 9. Health spring
- 10. Arm joint
- 11. Jump
- 12. Destiny
- 16. Decimal base
- 21. Ray

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



Caltech Public Events is now hiring student ushers.

\$15 per hour to work concerts, performances, lectures, films and parties.

No experience needed, no hard labor, flexible schedules.

**Requirements: Caltech student, Positive attitude, Friendly personality*

To apply email Adam Jacobo (ajacobo@caltech.edu) or call (626) 395-5907

For info on Caltech Public Events visit: www.caltech.edu/content/public-events

Caltech Fencing Claims Team Wins Across All Weapons

GoCaltech

The Caltech fencing team participated at the IFSC team competition on November 3 at UC Irvine. Caltech claimed at least one team in each of the weapons for both men and women.

Among the highlights during the women's portion of the meet were numerous victories in each of three weapons.

The foil duo of Katie Fisher and Stephanie Moon beat UC Santa Barbara, USC and Arizona State out right despite being a person short of the regular three competitors. In the head-to-head meet against USC and Arizona the Beavers came away with wins because they accumulated more touches

then their competitors. Christina Meyers and Constance Robinson were the key contributors in the epee wins over UCLA and Arizona State.

They almost swept the Bruins as the Beavers won eight of nine bouts. The sabre trio of Shi En Kim, Bella Guo and Seohyum Kim also picked up a win by knocking off UC Santa Barbara.

During the men's competition a handful of competitors got into the action for the first time while some returners helped paved the way for team wins.

The foil team beat UCLA, UC Santa Barbara, USC and Arizona State. The win over the Sun Devils came down to the final bout as

first-year Matthew Jin broke the 4-4 tie by pulling out the victory.

Also contributing to the foil wins were Eugene Vinitzky, Anup Kishore and Keegan Mendonca.

John Christian, Taylor Strumwasser and Omer Subasi were key cogs in helping the epee team post wins over UC Santa Barbara and Pasadena Community College.

They very nearly beat Arizona State but the Sun Devils flipped the script this time as they won the final bout to break the 4-4 deadlock.

Jonathan Stauffer and Will Yu also stepped into bouts during the tournament as they continue to adapt to collegiate-level fencing for the Beavers.



A Caltech men's foilist squares off against an opponent.

-gocaltech.com

A victory over Pasadena Community College highlighted the day for the trio of Christopher Couste, Marco Cruz-Herdia and Colin Murphy during the sabre

competition. The Beavers will next participate in an NCAA meet when they travel to the Western Invitational on January 11 at Stanford.

Weekly Scoreboard

Men's Soccer
at Cal Lutheran
L, 3-0 Final

Women's Volleyball
vs. Whittier
L, 3-0 Final

Men's Soccer
at Occidental
L, 2-0 Final

Men's Water Polo
at Pomona-Pitzer
L, 16-9 Final

Women's Volleyball
at Cal Lutheran
L, 3-0 Final

Men's Water Polo
at Redlands
L, 19-3 Final

Women's Volleyball
vs. Pomona-Pitzer
L, 3-0 Final

Men's Water Polo
vs. Occidental
L, 13-3 Final

Women's Volleyball
vs. West Coast Baptist
L, 13-1 Final

Theater Arts at Caltech / Caltech Players / EXPLiCIT

AUDITIONS



Saturday, November 23rd
2:00 - 6:00 pm
TACIT House, 275 S. Hill Avenue

Sunday, November 24th
2:00 - 6:00 pm
Ramo Auditorium

Calling all performers: audition for RENT, Caltech's 2014 winter musical from the people who brought you Little Shop of Horrors. This rock musical by Jonathan Larson follows the life of a group of artistic friends coping with poverty and disease in New York City, with such famous songs as "Seasons of Love" and "La Vie Boheme".

We're looking for passionate and committed students, staff, or community members for positions onstage, backstage, or in the pit band.

For stage auditions, please come prepared to sing a song of your choice not from the show, and to read sides.

To inquire about backstage positions, contact brophy@caltech.edu

To play in the pit band, email jetsen@caltech.edu

**Saturday and Sunday,
December 7 & 8, 2013**

Ramo Auditorium, 2:00 - 6:00 pm

Please join us for auditions for our Spring play

Caltech Professor Emeritus Oscar Mandel's ironic wit is brought forth in a novel new production of selected mini plays,

Kukkurik Fables

STUDENT DIRECTOR SHOWCASE

Friday and Saturday, December 6 & 7

7:00 pm

Ramo Auditorium

featuring

The Philadelphia by David Ives, directed by Chris Dosen, '17

Here we are by Dorothy Parker, directed by Dan Ilyinm, '17

Flop Cop by Dorothy Cunningham, directed by Clark Jhang, '16

Timon & Pumbaa are Dead by Manan Arya, grad student

A Forgotten Cause by Juan Diego Palomino, '17

Casts include:

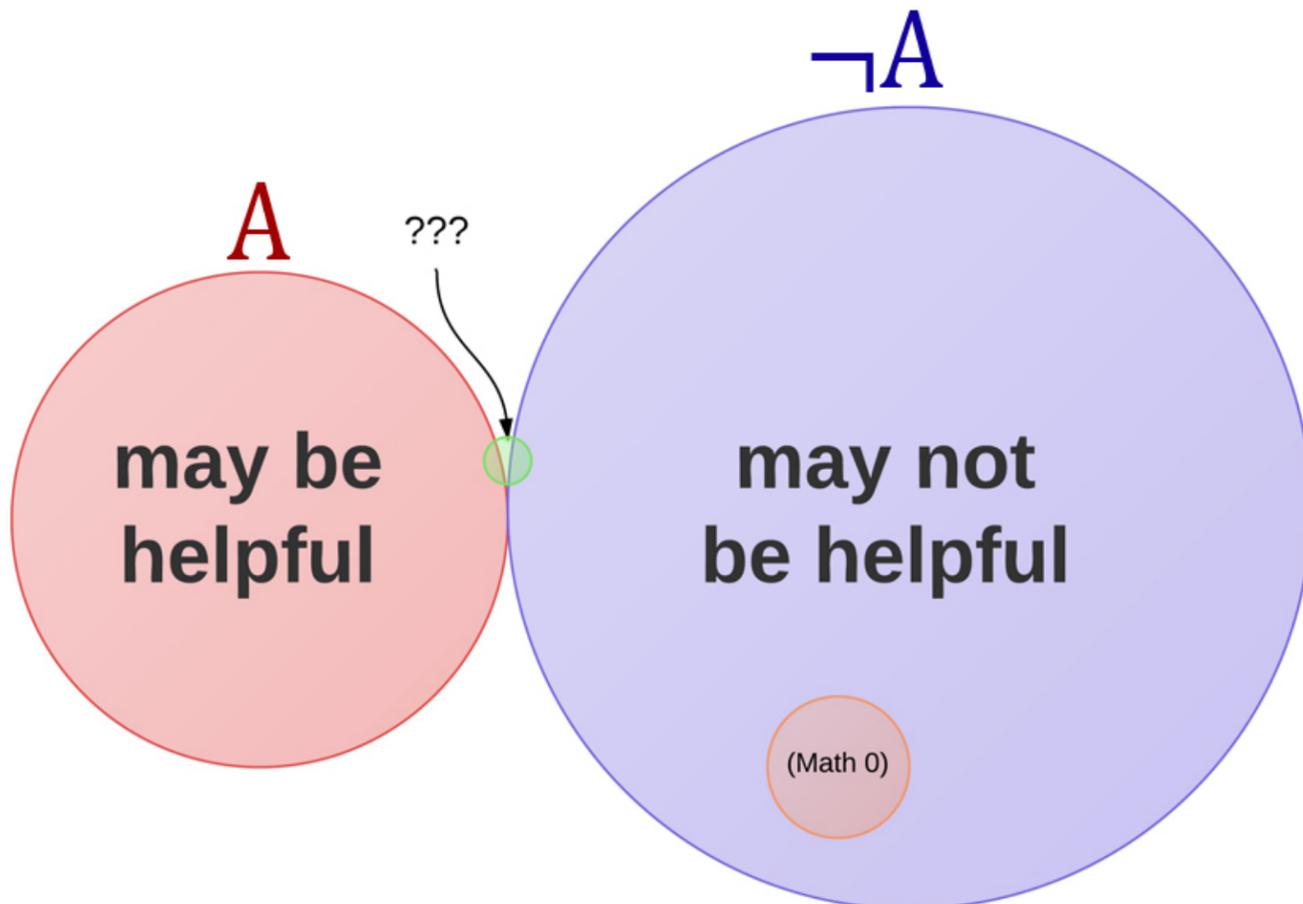
Grant Remmen (grad student), Chinmay Nirkhe, ('17),
Rebecca Tang ('16), Jeremy Brouillet (grad student)
and Hui Ying Wen (JPL)

Principle of Least Action Ben Bartlett

Stupid things TA's say a lot:

#1: "AMBIGUITY"

"This method may or may not be helpful."



$$A \cup \neg A = \text{True} \vee \text{False}$$

Really, what did this clarify?

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

tech.caltech.edu

The California
Tech
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Pasadena, CA 91125