

## SanPietro Travel Prize: A month under the Norwegian sun

**ANNIE RITCH**  
Caltech Alumna ('14)

Last June, I graduated, threw all of my stuff in storage, and packed my tent, 4 days' worth of clothes, and a few other things before flying to Norway for my SanPietro trip. I went to Norway seeking adventure, natural beauty, and a change of pace after four years at Caltech. I was not disappointed.

Norway is an absolutely gorgeous country; not a day passed in which I wasn't astounded by the sights around me. I biked over mountains, hiked through valleys, journeyed through fjords, swam in the Arctic Ocean, and was reminded daily of why I had fallen in love with earth system science. What really surprised me, though, was the beauty in the interaction between the people and their environment. In a country that is engulfed by darkness in the winter, buildings are painted in bright, lively colors. During the warmer summer days, locals take to the many interconnecting parks and trails that remind even the most metropolitan cities that they were not always concrete. In the city of Bergen, I found a fierce pride for the intersection of history, art, and nature. Nearly a thousand miles away in the small island town of Kabelvåg, I discovered a rich fishing heritage in a community that has been utilizing cod migration routes through the region's frigid waters for over 800 years.

Perhaps the most highly anticipated portion of my trip was my hike to Trolltunga ("Troll's Tongue"). Surprisingly, many Norwegians I encountered had never heard of Trolltunga. Another referred to it as "Nor-way's Grand Canyon," but to me, the place is beyond comparison. Imagine a huge, dark blue lake, surrounded

by hundreds of meters of cliffs and snow-capped mountains. Now imagine a strip of rock jutting out over the edge. This is Trolltunga. Unlike the Grand Canyon, it is extremely difficult to access. Though a long combination of public buses does lead to the trailhead, there's still 22 km of hiking through snow, streams, and incredibly steep slopes (including a section of 500 m elevation gain in 1.5 km of trail). At one point, I literally had to climb up an icy snowbank using footholds made by previous hikers, but it was entirely worth it. Sitting on the edge of Trolltunga was exhilarating, terrifying, and, above all, awe-inspiring.

Another highlight of my trip was seeing the midnight sun. Because Norway is at such a high latitude, the summer days are extremely long, and even in the southernmost portion of the country, I never saw darkness. For the majority of my trip, the hours between 11 p.m. and 1 a.m. served as a prolonged dusk/dawn. Once I ventured far enough north (69 degrees 7 minutes) to the town of Tromsø, though, the sun never touched the horizon. On my final evening in Norway, I took a cable car into the local mountains from Tromsø, where I hiked for a few hours to a peak. At midnight, I was rewarded with a spectacular view of the midnight sun above a sea of clouds. It was a glorious end to a marvelous trip!

One short article cannot possibly begin to touch the surface of what I experienced during my month in Norway. The country is beautiful, humbling, inspiring, and rich with local heritage, and I feel so fortunate to have been given the opportunity to visit. Apply for the SanPietro Travel Prize—you won't regret it!



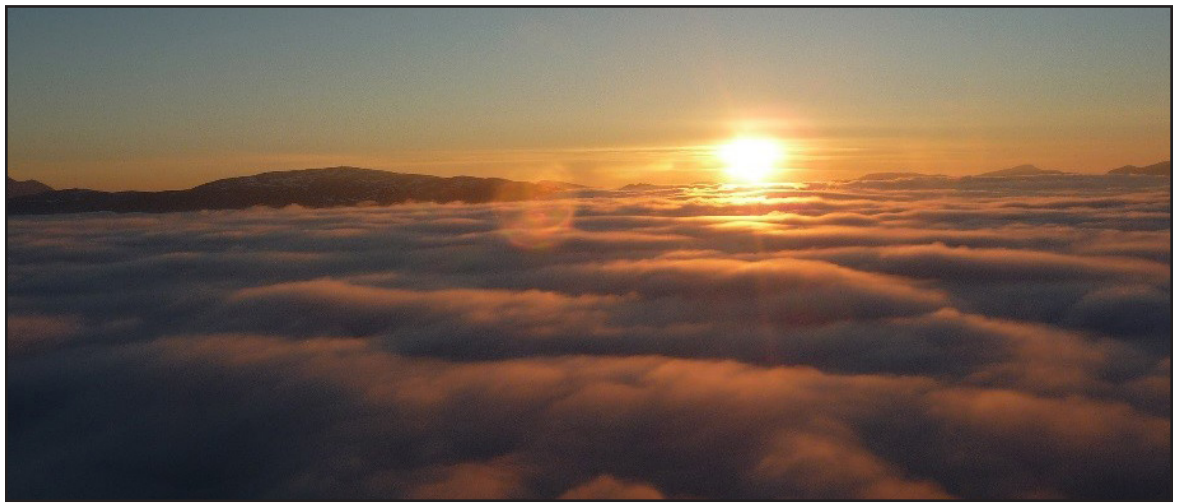
Trolltunga juts out hundreds of meters above Lake Ringedalsvatnet.

Photo Courtesy of Annie Ritch



Colorful homes and wildflowers are plentiful in the lakeside town of Odda.

Photo Courtesy of Annie Ritch



The midnight sun sits over a sea of clouds in Tromsø, Norway.

Photo Courtesy of Annie Ritch

## Daring FBI burglars to attend film screening of 1971 at Caltech

**CASEY HANDMER**  
Contributing Writer

*There will be a film screening and discussion on Tuesday, Jan. 27, in Beckman Institute Auditorium starting at 6 p.m.*

"The best and the brightest of this generation are angry as all get out and they have every right to be. They're up to their noses in loans that send them out into the world as indentured servants. They know that the economic recovery is of Wall Street and has left Main Street behind. They know the political consequences of the widening gap between rich and poor. They know their vote is drowned in a sea of money. They're angry that old white men who run things have turned their back on the sustainable future that does not belong to them. They're going to be dead; the future belongs to the young folks. Leaders have turned their backs on the future and on a world that's running out of possibilities."

I'm speaking with John Raines. His interactions with students over a teaching career spanning four decades has given him terrific

insight into the challenges of the future. Despite his 81 years, he is more optimistic about the future than ever before.

"The anger of the best and brightest gives me great confidence and hope for the future. Courage comes out of anger when focused and disciplined." John knows something about courage. In 1971, he was part of a team that burgled an FBI office, leaked incriminating files to the press, and precipitated a decade of reforms and accountability for systemic illegal government activity. As one does.

John described his transition into the Vietnam War protest movement: "I was very active in the civil rights movement, [which took the form of] nonviolent protest. We were very successful. We got the Civil Rights [Act] passed in '64 and the Voting Rights Act passed in '65. It took very considerable political pressure. We had to defeat the southern states' filibuster. We knew from back then something about [FBI founding director] J. Edgar Hoover's FBI and their dirty tricks, infiltrators, and informers. Hoover hated [Martin Luther] King. Thought he was a communist. Tried to persuade the

people that King was a communist and thus an enemy of the people of the United States. [My wife] Bonnie and I came into the anti-[Vietnam] War movement after '65, and by the time we got to '68 and '69, we knew that Hoover was using the same tactics as [those] against the civil rights movement, but we had no way of documenting that. The general atmosphere by '69 was that civil disobedience and nonviolent protest was not working—getting no traction—so some of us began to consider moving from nonviolent protest to nonviolent disruption. That was the key move to beginning to think about breaking into significant government or selective services (draft board) offices."

Members of the movement "cased draft boards and broke in in middle of the night," Bonnie added. "There were more than 350 draft board break-ins. They were orchestrated as part of the East Coast Conspiracy to Save Lives, which was part of the Catholic Left. Originally, protesters would break in, burn files with homemade napalm, stand around, and get arrested. It was found this was

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# Caltech Y Column

CALTECH Y

The Caltech Y Column serves to inform students of upcoming events and volunteer opportunities. The list is compiled by Neera Shah from information given by the Caltech Y and its student leaders.

More information about the Caltech Y and its programs can be found at <https://caltechy.org>. The office is located at 505 S. Wilson Avenue.

## Upcoming Events:

### 1. Dr. Martin Luther King, Jr. Commemoration Week

Monday, January 20th - Friday, January 23rd

The 2015 Dr. Martin Luther King, Jr. Commemoration Week celebrates the 50th year anniversary of Freedom Summer, the voter registration movement that ignited racial tension across the South. The speakers, musical performances, documentary screening, and discussions throughout the week will shed light on this historical event and its importance in American history. MLK Week is coordinated by the Caltech Center for Diversity (CCD) and The Caltech Y with support from the Division of Student Affairs.

### 1a. MLK Service Day: "A Day On, Not Off"

Saturday | January 17th | 7:30 AM-12:00 PM | Washington STEaM Magnet Middle School, 1505 North Marengo Avenue, Pasadena

Volunteers will plant flowers, clean up, and do several maintenance tasks, followed by lunch and entertainment provided by students from Washington Middle School. Transportation is provided. Please RSVP at: [https://docs.google.com/forms/d/1Y\\_37ZD-4LOGPHSbhmJ-JPC2ahUP1fDIFv1ZQOyUFF78/viewform](https://docs.google.com/forms/d/1Y_37ZD-4LOGPHSbhmJ-JPC2ahUP1fDIFv1ZQOyUFF78/viewform).

### 1b. "Eyes on the Prize" Documentary Screening: "Mississippi: Is this America?" (1962-1964)

Tuesday | January 20th | 12:00-1:00 PM | Center for Student Services, 2nd Floor

Season 1, Episode 5 of the "Eyes on the Prize" series focuses on the extraordinary personal risks faced by ordinary citizens as they assumed responsibility for social change, particularly during the 1962-64 voting rights campaign in Mississippi. Lunch will be provided. Please RSVP at <https://www.surveymonkey.com/s/EyesonPrize5>.

### 1c. "We'll Never Turn Back: Pursuing Happiness from Freedom Summer to Ferguson"

Wednesday | January 21st | 12:00 - 1:00 PM | Avery Library

Peter J. Harris reads from his book *The Black Man of Happiness: In Pursuit of My 'Unalienable Right'*, with performances of Spirituals and civil rights era songs by Freedom Summer alum David Crittendon. Lunch will be

provided. Please RSVP at: <https://www.surveymonkey.com/s/HonoringFreedom>.

### 1d. Those Who Lived It: Finding the People Who Were Changed By Freedom Summer and Telling Their Stories

Thursday | January 22nd | 12:00 - 1:00 PM | Avery Library

Susan Goldman Rubin will discuss the research and writing of her book *Freedom Summer: The 1964 Struggle for Civil Rights in Mississippi*. The author will be available after the talk to sell and sign copies of her book. Lunch will be provided. Please RSVP at <https://www.surveymonkey.com/s/SusanRubin>.

### 1e. Freedom Summer: A Fight for Civil Rights in Mississippi

Friday | January 23rd | 12:00 - 1:00 PM | Beckman Institute Auditorium

Longtime local activist and civil rights attorney, Dale Gronemeier, went to Mississippi in 1964 where he helped register African American voters during what has been since called Freedom Summer. Join us in hearing a few war stories about Mississippi in the summer of 1964, the freedom struggle, and its place in American history. Lunch will be provided. Please RSVP at <https://www.surveymonkey.com/s/DaleGronemeier>.

### 2. Courage and Resistance Tour

Tuesday | January 27th | Beckman Institute Auditorium

Film Screening (1971): 6:00 PM

Discussion: 7:30 PM

- Betty Medsger - Author, *The Burglary: The Discovery of J. Edgar Hoover's Secret FBI*

- Professor John C. Raines & Bonnie Raines - *Cointelpro "Burglars"*

### 3a. Pasadena LEARNS

Friday | 3:00 - 5:00pm | Madison and Jackson Elementary School | Pasadena

RSVP to [vkumar@caltech.edu](mailto:vkumar@caltech.edu).

### 3b. Hathaway Sycamores Tutoring

Thursday | 5:30-8:00pm | Highland Park

RSVP to [sherwood.richers@tapir.caltech.edu](mailto:sherwood.richers@tapir.caltech.edu).

### Other Announcements - Beyond the Caltech Y

#### Girls on the Run - Coach/Mentor Girls in 3rd-8th Grade

February 23rd - May 22nd | Pasadena and other locations | For more info contact Katie Bradshaw at [volunteer@gotrla.org](mailto:volunteer@gotrla.org) or 626.808.7715

We welcome Coach/Mentors and girls of every size, shape, and fitness level. No running experience needed! (One-day Training Event and background check required.) Join one of our 90 teams of volunteer coaches to facilitate our easy to follow curriculum with a group of 8-15 girls over the course of 12 weeks (Feb-May), culminating in a celebratory 5k event on May 17th. Sign up today: <http://www.gotrla.org/coach>

# Trio emphasizes importance of public knowledge of government activities

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costly in terms of time spent in jail and money spent on lawyers.

There was a transition within the Catholic Left to do it clandestinely. Pioneering procedures for successful breaking in and removal of files was a learning curve."

In 1970, John and Bonnie became involved in a plot to burgle an FBI office and remove files they had a hunch would reveal wrongdoing. A team of eight otherwise normal people planned meticulously for months, consistently surprised at how poor security was. "They didn't anticipate a break in," Bonnie told me.

John added, "Arrogance of power. Couldn't conceive that they would become a target of their own practices. Even during the [subsequent] investigation, 200 agents kept pursuing the wrong people. We were one of thousands of suspects in the Philadelphia area. When you become politically active, it's important that you have a movement, so you can hide in plain sight."

Initially, they had no idea just how significant their haul was, although they immediately found the expected evidence of FBI burglary, harassment and blackmail. Betty Medsger was the first journalist to receive some of the liberated documents and publish them. One document stated that agents were to increase rates of interviews with dissenters "for plenty of reasons, chief of which are it will enhance the paranoia endemic in these circles and will further serve to get the point across [that] there is an FBI agent behind every mailbox."

But the mother lode was still to come. Bonnie explained: "The crucial document was the 'COINTELPRO' (COunter INTELLigence PROgram) document. A program completely unknown to the press, to Congress, and probably even [to] the White House." Investigative journalist Carl Stern eventually obtained a court order to force the FBI to hand over relevant documents under the Freedom of Information Act. They revealed a covert program that systematically spied on and repressed constitutionally protected political activity, focused on students, "hippie looking people," blacks, and Congress members. At its peak, COINTELPRO had dossiers on hundreds of thousands of people and went as far as political assassinations. Revelations eventually led to the creation of the Church Committee and substantial surveillance agency reform, including permanent congressional oversight.

Last week there was extensive press coverage on a proposal by UK Prime Minister David Cameron to

legislatively require encryption backdoors in all electronic communications software, despite the fact that existing blanket

power or capacity [surveillance] technology can give us, we want it and as soon as it's available.' That's the overriding attitude and principle, rather than 'this is what we want to accomplish and how do we bend the new technologies to accomplish that?' My concern is that the capacities are so great that it makes it impossible for it to be

*"Initially, they had no idea just how significant their haul was, although they immediately found the expected evidence of FBI burglary, harassment and blackmail."*

surveillance did not prevent the Boston Marathon bombing, the underwear bomber, the French *Charlie Hebdo* attack, or any other planned terrorist attack. Why are we having the same discussion post 9/11 about the terrorists that we did in the 1970s about the communists?

John explained. "Nothing has changed. In the 1950s and 1960s we were a nation governed by fear of the International Communist Conspiracy. People's fear of communists was used [for political ends]. Anyone who opposes is a subversive. Today, the nation is still ruled by fear, this time of terrorism. Most of us do not act in our day-to-day lives like we are afraid. But both terrorists and anti-terrorists run on the same gasoline, sing the same song, dance the same dance, for both of their successes and budgets and ambitions depend on making American people fear. They need us to be afraid. It's really fascinating. Why is it so easy to scare people? Why is the politics of fear so successful? We depend every day upon feeling safe with each other, and almost always this is the case. It's what makes everyday life possible. Where does the fear

and paranoia come from? The degree to which our culture is saturated with violence in movies and news and television, it is a complete contradiction to everyday life. The real contradiction for us—we the people—why do we put our lives in the hands of people who profit from increasing fear?"

I wondered about their thoughts on the intersection of rapidly developing technology, privacy, government accountability, and the moribund legislative process.

Bonnie started: "I think the [technological] genie is out of the bottle. I think it can be used for good or for harm. I don't think the discussion is taking place. Very few young people today worry about privacy. [Encryption] is a technology that very few people know much about. Who's asking the questions about what could happen in the next few years? Once it's learned, is it too late? Is that conversation taking place?"

Betty added, "The technology is going there whether we like it or not. The agencies ... have adopted the idea/attitude that 'whatever

valuable in preventing anything. It's only of value after the fact. It works against them accomplishing what they seek to accomplish. It was claimed that NSA surveillance helped to prevent 55 terrorist attacks and when that was examined very carefully it came down to one, maybe."

What does Betty have to say to today's students? "The same as to young journalists: Know what your values are so that you know what's in control of your creativity, of your decision making. Think about what your values are and always try to be aware if your values are being shaped by technology and the goals of your masters. When you find your values that you think are critically important to your own integrity and to your role as a citizen in a democratic society, try to think continuously about what you would do if you felt that what [other elements of society] did was out of sync with your values."

John added, "We're going to need people who, when they see bad things happening, blow the whistle. But they depend on a courageous press and investigative reporters. All of those things finally head to Washington and

*"Think about what your values are and always try to be aware if your values are being shaped by technology and the goals of your masters."—Betty Medsger*

the folks who are supposed to protect our freedoms. There is no democracy without dissent. Power will always try to protect its own privileges. Dissent is the engine of democracy. Democracy is always a horizon to be strived towards. We got information to the American public. The public responded and said 'stop this.' Between '76 and 9/11, we had significant restrictions on the FBI and CIA."

Bonnie said, "Young people today need to think about who they are going to affiliate with as they become adults. What will they commit to? I hope they commit to making necessary changes, rather than just floating about as individuals and trying to find a way to make money."

*Quotes edited for brevity and clarity.*

*A discussion with John, Bonnie, and Betty will follow the film screening on Jan. 27.*

## A call to action in defense of the House System

**MONICA ENLOW**  
Contributing Writer

Upon reading Dean Dabiri's article run in last week's issue, I was curious as to why he might have brought this topic up. While I disagree with the methods and statistics he used in attempting to make his point, I do believe that there are greater issues about existing student institutions that need to be discussed.

At the end of his article, Dean Dabiri tasks students "in the interest of undergraduate self-governance, to encourage our students to propose substantive solutions," regarding the disparities in house GPA and graduation rates. I believe that now is a critical moment for undergraduate students, alumni, and supporters of the House System at Caltech to come together to express support for the House System. This doesn't mean that everyone should simply come forward stating that they love the House System. Now is the time to provide substantial evidence, rooted support, and strong affirmations of the House System. While Dean Dabiri may have stepped on the toes and touched a nerve of many members of the Caltech community, including myself, he is tasking students to provide concrete evidence about why the House System should or should not exist in its current state. This opportunity should not be taken lightly as it has in the past. Student leadership and alumni opinions have the opportunity to shape the future of what the House System at Caltech is to become. This year we welcomed Dr. Rosenbaum as Caltech's new institute president. Dean Dabiri's article has sparked a discussion that undergraduates can use to highlight issues that they find important and to bring to light some issues that may be overlooked currently. It is important that our new institute president knows the concerns of the students and understands why there are compelling reasons to support the House System and other institutions that are held close to our hearts. I can recall my own experience in student leadership, and when the question "Why should student self-governance remain in place?" was asked, the other student leaders at the time struggled to find the words to justify it. Now is the prime opportunity for anyone in support of the House System to find the words to justify it.

I agree with Dean Dabiri in the opening of his article when he says that the first step to affecting change at Caltech is a clear and concise answer to the question, "What problem are you trying to solve?" I, however, am unclear as to what he believes that problem is. Is the problem with the House System as a whole? Is the problem House Y?

*Please see the Editors' Note printed on page 6 of this issue with regards to the opinions featured on this page.*

Is the problem rotation rules? Is the problem that old habits die hard? Is the problem the six-year graduation rate? It is evident in his article that those are some of the candidates for the problem at hand. As students, though, we know that there are so many problems to be solved. How do I finish all these sets in one week? How do I finish all my sets, do research, attend student leadership meetings, play a sport, sleep, maintain a social life, and somehow find time to shower and eat? How do I help my peers thrive here? These are questions that I'm sure any undergraduate has been faced with at some point or another. Dean Dabiri sees the institutional statistics, but he doesn't know the individual circumstances of each house that affected those statistics. Being that a class of students is only 230 people means that individuals can greatly affect statistics, unlike UCLA which admits approximately 5,700 freshmen every year. Again, now is the time to raise support for why Caltech is not merely an institute, it is a community, the primary basis for this community being the House System. This is the opportunity for students and alumni to advocate for the continuance of the House System, and why alternatives, such as all freshmen dorms would be detrimental to the style of learning and sense of community at Caltech. Rotation rules achieve the objective currently set, which is to place students in houses where they will hopefully thrive and grow as individuals. The objective of rotation is not to increase house GPA with every admitted class, but rather to find the best way to support the individual personalities of students as they pursue their academics.

I don't believe that the problems to be solved are limited to the House System. I believe that there are tougher questions about the style of teaching, the style of examinations, and the methods for promoting good "mental health" at Caltech that still need to be addressed. However, now is the time to show Dr. Rosenbaum and skeptics of the House System why it is of the utmost importance to the future success of the institute that it remain in place.

## Academics and the House System: Moving the conversation forward

**ADAM JERMYN**  
**NICHOLAS SCHIEFER**  
Contributing Writers

Does the House System violate the Honor Code? This inflammatory question was posed to the Caltech community last week when Dean of Undergraduate Students John O. Dabiri published an article in *The California Tech* presenting data showing a statistically significant correlation between measures of academic success—especially graduation rate—and house membership.

Whether or not this correlation is a problem depends principally on the extent to which the relationship is causal. If there are causal effects of any sort, it is worth examining them to determine if the current situation could be improved. The question of whether the correlation results from an Honor Code violation derails the conversation; not all problems are Honor Code violations. A conversation

**EDWARD FOUAD**  
Contributing Writer

In response to any problem, the logical first step is to find a culprit upon which to assign responsibility. One problem that Caltech appears to face, as pointed out by Professor John Dabiri in his article in the Jan. 12 issue of *The California Tech*, is the relatively low graduation rate amongst the undergraduate body. Rather than examining quality of instruction, quantity of academic requirements, and access to mental health resources as potential sources of the problem, Professor Dabiri chose to single out a sole perpetrator: the House system. Pointing to disparities in average academic performance between students of different houses, Professor Dabiri suggested that the House system potentially takes unfair advantage of the incoming freshmen by "predetermining, at least statistically, their future educational success at Caltech." Here, I take issue with this point; namely, I argue the house system does not violate the Honor Code, regardless of whether the association between house membership and academic performance is causal or noncausal. Further, I argue that the House system has been unjustly targeted as the scapegoat of a problem for which it is wholly not responsible.

When the 230 "brightest minds in the world" enter our campus each year, they bring with them 230 different backgrounds, personalities, and interests. Some of these differences—including work ethic, study habits, and future career goals—will have a substantial effect on the students' future academic success at Caltech. Over the course of rotation, these diverse freshmen learn about the various house cultures and begin to identify the environments that best match their personalities. For some students, that might be a quiet atmosphere that will allow studying late into the night; for others, it may be somewhere with loud music and many people to socialize with. This is one of the great successes of the House system—it provides an ingenious way for incoming freshmen to find the social atmosphere that

they are looking for, and to build a network of people with similar interests who will support them through their time at Caltech and beyond.

It should not come as a surprise, therefore, that average academic performance differs among the houses. While not always the case, it is generally true that students who invest more time into studying and working through problem sets perform better academically. But while a student in House X might be excited to spend a Friday night getting a head start on the next problem set, a classmate in House Y may want nothing more than to relax after a long week by watching a movie with a group of friends. While neither behavior is condemnable, one will clearly have a more positive effect on academic success. It should be noted that while academic differences among the houses may exist on average, they do not generalize to every member of a particular house; students of all personalities and at all academic levels can be found in every one of the houses.

A difference in academic performance between people of different personalities living in different houses does not appear to be a problem in and of itself. But Professor Dabiri suggests that it is indicative of an Honor Code violation, as a student who is rotated into a historically underperforming house may become surrounded by a culture that is less academically driven. To evaluate whether such a violation is truly taking place, we must determine whether the academic differences between members of different houses are brought about unfairly.

If the academic disparities are purely correlative—that is, they emerge solely from differences in the student composition of the houses—then it is unwarranted to place the responsibility on some shortcoming of the houses. The house system is certainly not responsible for giving students the personalities they bring upon arriving to Caltech. But could inequality in academic performance among the houses disadvantage certain students in finding people to collaborate with, or in acquiring support from upperclassmen? This is highly unlikely for two reasons. First, academic

collaboration between members of different houses is commonplace—the walls between houses do not block students from working with one another and seeking the help they need. Second, all students have the same opportunity to access academic support in the form of office hours, teaching assistants, and student tutors—regardless of which house they live in.

However, what if the academic disparities between the houses are indeed a causative effect? While it is impossible to prove that a house membership causes a change in academic performance (since freshmen are not randomly distributed among the houses), there is reason to believe that this could be plausible. House membership has a huge effect on social life, which in turn can affect the amount of sleep one gets, how much time one puts into house activities rather than schoolwork, and one's overall emotional and mental health. All of these factors can greatly influence academic performance. However, none of these influences indicate that students are being unfairly taken advantage of, provided that participation in all house activities is voluntary.

At the end of the day, every student is responsible for making his or her own decisions. Students have the freedom to choose whether to participate in house activities that build comradery with their peers, at the potential cost of taking time away from academics. It is unreasonable to hold houses responsible for the lifestyle decisions of their members.

The House system is not perfect, and there is no doubt that house communities could do more to provide academic support for students. But fundamentally, the issue of academic underperformance at Caltech is neither caused by nor the responsibility of the House System—regardless of any association that may exist between the two entities. To suggest that House system violates the Honor Code as a result of the diverse academic performance at Caltech is inherently misleading, and to point to the House System as the sole cause of low graduation rates represents an oversimplification of a complex and multifaceted issue.

with the potential to enhance student experience at Caltech is a conversation worth having.

Based on the reactions we have seen in the Houses, over email threads, and on Facebook, a lot of people—students, alumni, even professors—reacted with anger to the article. This response is understandable; in many ways, the past few years have trained the student body to mistrust administrative actions that seem to conflict with our values. Reading more carefully into Dean Dabiri's article, past the Buzzfeed-esque title, confusing phrasing, and provocatively-phrased questions, we have found an underlying point that passes muster: there is a correlation between House membership and academic success, and we, as scientists, engineers, and mathematicians, need to investigate.

Over the past week, we have had extremely productive conversations with over two dozen people about underlying causes of the effect Dean

Dabiri noticed. Some are potentially causative—cultural attitudes towards the two frosh terms of Pass/Fail grading often came up—while others are correlative, including certain house cultures attracting underserved students and the uneven distribution of majors across houses.

Even in these short conversations, we have already brainstormed potentially impactful ways for Caltech to better serve students. We can emphasize to new freshmen that Pass/Fail is an opportunity to learn without worrying about grades, and not an "opportunity" to learn nothing in one's classes. We can set up house-independent study groups, so that those who have trouble collaborating due to the option distribution in their house can still benefit from collaboration. We can improve UCC systems across campus. Some of these solutions can be implemented on a large scale to serve the entire community, while others can be made house-specific. The

House System gives us a unique way of targeting resources to those who need it most. Perhaps the correlation we see can serve as an advantage.

Getting to these productive conversations took time: we had to look past our initial emotions and think objectively about things we hold dear. One of our biggest fears—and one of the worst likely outcomes of this conversation—is that an inflammatory *Tech* article will prevent us from having a conversation we desperately need. We are huge supporters of the House System, which has served us both very well, but that should never prevent us from having conversations about potential flaws and their solutions. We have enormous faith in the ability of Caltech undergraduates to solve hard problems; let's move past our initial emotions, and solve the one facing us now.

Comments can be sent to [ajermyn@caltech.edu](mailto:ajermyn@caltech.edu) and [nschiefer@caltech.edu](mailto:nschiefer@caltech.edu).

## “I’m dying.”

KSHITIJ GROVER  
Contributing Writer

I’m dying, just like you.

There. I said it. Not so bad. Say it with me: I’m not going to exist 70 years from now.

At first thought, this isn’t too surprising. You’ve known it your entire life. Heck, *I’ve* known it my entire life.

But not only is death inevitable, it’s pretty darn soon. If you’re reading this, you’ve definitely been alive *at least* 1/5 of your life, not accounting for the fact that each day is going to go faster as time goes on (it’s literally a smaller percentage of the time you’ve lived thus far).

1/5. But what do you care? You can’t do anything to stop it. There’s no conflict you can resolve here. That’s where things start to get a little bit fuzzy. We’re used to leveraging some trait of ours—some asset we have—to solve problems. Intelligence, power, money. Death is different.

**Be as mighty as you want—you’re going to die.** It doesn’t matter if you’re the nicest, most down-to-earth person anyone could ever meet. *You’re going to die.* It doesn’t matter if you’re a thief—a murderer. It doesn’t matter if you’re Bill Gates, Warren Buffett, or Hugh Hefner. *You’re going to die.*

It doesn’t stop there, though. It’s not just the fact that death is imminent. It’s that it’s unpredictable.

Look back at that 1/5 number up there. It’s the farthest thing from a guarantee.

It’s a lower bound.

For me, the craziest thing about death is how mysterious it is, and how different it is from most things we can even conceive.

**Death isn’t an event.**

Almost every event is associated with a cause and an effect. Almost every event has *consequences*. Whether consciously or subconsciously, we make a binary decision about most things—yes or no, depending on what the result is.

We don’t know the result. We don’t know when it will happen. We don’t have a choice.

Death just occurs. You can’t reason through something like that. Once it befalls you, you’re potentially not there to think about the ‘effects.’ You can’t think of death in a reasonable way. It’s where logic seems to evade us.

You see, most people walk around, consciously thinking of themselves with some sort of abstract identity. Now take that away. In 70–80 years, what happens to ‘Kshitij?’ Sure, I may not be physically walking around, but what about *who I am*? Are those two things even separable? Is that what a *soul* is?

Of course, this is where people begin to disagree. Some believe in an afterlife. Some believe in an absolute end to things.

I’m not concerned with what happens after death. To me, that’s the realm of the unknown—I’m concerned with what that means for the present. For the now.

One of my friends recently said something that hit the nail right on the head: **“Time is everyone’s greatest asset, but no one is acting like it.”**

We take most things for granted, but at the basis of it all, we depend on the fact that we’re going to live another day to reach our dreams, to accomplish our goals. We depend on the future.

I’m not saying you’re going to get hit by a truck tomorrow, or that you should plan your life accordingly.

*But I’m saying that it could happen.*

And that, on its own, should be motivation enough. Maybe you can’t change the fact that you’re dying. But heck, you might as well be *really* living while you’re at it.

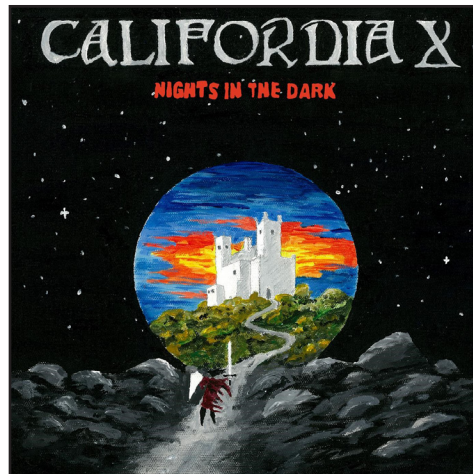
## California X branches out on *Nights in the Dark*

NAILEN MATSCHKE  
Contributing Writer

Good rock without gimmicks or frills to separate it from the ocean of material that has been squeezed out of guitar, bass, and drums is a bit of an uncommon sight, but California X’s self-titled 2013 debut managed to catch attention. Foregoing variety, the band instead allowed it to serve as a showcase for its ability to pump out energetic but calculated alt-rock, going easy on the music’s brains but giving it plenty of brawn with in-your-face guitar delivering hammering riffs. It’s a memorable listen, and definitely suggests some room for expansion of the band’s formula, which arrived on Jan. 13 in the form of the band’s sophomore album *Nights in the Dark*. Although I think most would agree that the rock quartet feels tired at this point, *Nights in the Dark* is an LP that any artist would be proud to have released, demonstrating that the band clearly understood what the strengths and weaknesses of its first album were, and used this to craft a more mature second effort.

This is not immediately apparent, however, as the first two tracks, “Nights in the Dark” and “Red Planet,” are so stylistically similar to the material on *California X* that back-to-back the two basically just blend together. The band opted to work for a second time with Dinosaur Jr. sound engineer Justin Pizzoferrato as the producer, and it’s impossible not to notice the sonic similarity between California X and the group which not only provides much of the band’s musical heritage, but also has the same hometown (Amherst, MA). As a result, we again find the guitars in the spotlight, so high up in the mix that they walk all over the toes of the vocals, but this makes sense—one of the strengths of the California X’s first album was that it was so fiercely guitar-driven, and I’m glad the band decided to keep it that way. Many choruses are connected to the next verse by a guitar fill or two, and frontman Lemmy Gurtowsky falls short of incredible but well past competent, keeping his licks from getting stale except for a couple places (such as “Red Planet”) where they’re overdone. Additionally, the difference in context between the group and Dinosaur Jr. is not to be underestimated,

with California X’s emotional and animated take making the record feel more in the same vein as pop-punk (think *Dookie*-era Green Day) than the mellow alt-rock of the band’s forebears.



-http://consequenceofsound.net

The third track, “Ayla’s Song,” then presents a drastically different sound from the rest of the band’s discography, with a relatively short solo acoustic guitar interlude that briefly plays with a couple of melodies built upon an underlying chord progression. It’s too short and far too undeveloped to be interesting outside of the context of *Nights in the Dark*, but it’s not offensive and doesn’t overstay its welcome, so it does little more than mark where the album starts to deviate. It’s followed by “Hadley, MA,” a slow, glum number that sounds something that *Blue Album*-era Weezer could have gone on to produce. The track has crashing waves of guitar fuzz, multiple somewhat predictable but well-executed solos, and most strikingly parts where the band gets quiet enough so that we can clearly hear the softly sung vocals. This new sound works remarkably well and demonstrates that the band’s songwriting skills extend beyond mosh pit fuel to more intimate content as well.

“Blackrazor, Pt. 1” is yet another surprise, as its delicately sung vocals and continuous stream of guitar improvisation give it a Pink Floyd-like feel, while the deep, chug-filled chords in the background are right out of the heavy metal book. “Blackrazor, Pt. 2” picks up right where its predecessor leaves off, kicking the band back up into full gear and continuing

the metal feel via vigorously chugged power chords and harmonized guitar solos that could be right off of a Baroness album. It’s a good sound for California X, and I hope the band continues to produce material that embraces its heavier side.

Before the album’s second and final two-part song is another interlude, “Garlic Road,” which also starts off with a lone acoustic guitar, but instead of using finger picking to play multiple lines, both a clean and a lightly distorted guitar are gradually introduced along with a few sparse piano notes. The result is a tranquil piece that someone might use for a time-lapse video, but it doesn’t really go anywhere, which is disappointing on an album that’s already less than 40 minutes long. It still finishes on a high note, however, thanks to “Summer Wall.”

Building up from murky, highly-distorted notes to a fuzzy, lethargic march, “Summer Wall, Pt. 1” crescendos until the cymbals are crashing and the guitars are screaming to be heard, before abruptly stopping and allowing the uptempo “Summer Wall, Pt. 2” to take over. Despite its constant fast pace, the guitars stay contained while the vocals are elevated and clear, creating one of the most emotional and memorable parts of the album. The vocals are delivered forlornly with relatable, almost nostalgic lyrics, and every instrument matches the tone perfectly. Although the song stretches California X well into new territory, the band pulls it off smoothly for a satisfying and exciting end to *Nights in the Dark*.

After the narrow scope of the band’s self-titled album, what California X most needed to stay worth listening to was to branch out, and on its successor it’s clear that the band understood this. California X feels every bit at home in its new environment, and I’m interested to see where the group ends up going with the wide range of directions it has presented.

*Nights in the Dark* improves upon *California X* in all the right ways, and the group truly sounds impressive on almost every minute of the album. It may only be a step in the right direction for a band on the way to something greater, but *Nights in the Dark* is one of the best rock albums I’ve heard in a while.

## James Michelin Seminar Series welcomes Teddy Wayne

CHING-YUN (CHLOE) HSU  
Contributing Writer

Teddy Wayne, Whiting Award-winning author of *The Love Song of Jonny Valentine* and *Kapitoil*, visited Caltech on the evening of Jan. 13 and led this term’s first James Michelin Seminar. Wayne is also a columnist for The New York Times and a regular writer for *The New Yorker*, *GQ*, and *McSweeney’s*. The seminar was open to Caltech students as well as the general public, attracting an audience of about 50 people in the Dabney Lounge.

Wayne began the seminar with two 15-minute excerpts from his second novel, *The Love Song of Jonny Valentine*, a portrait of the fictional 11-year-old pop star Jonny Valentine. Both excerpts were in a colloquial, teenage-style first-person narrative, yet featured an extra veil of gravity when read out loud in Wayne’s deep, low voice. As Jessica, the main character in the excerpts, smoked marijuana for the first time, the audience naturally followed the ups and downs of her moods, engaged by her hesitation, her excitement, and her reflection.

After the seminar, many of those who had not read Wayne’s books before expressed strong interest in reading them.

Wayne talked about his works from an author’s perspective, and discussed various aspects of the writing process. He later took

questions from the audience, insisting that the questions “not [be] math or science related.”

When asked about the most difficult part of writing, Wayne admitted that he found the first push of momentum most difficult. Instead of “eureka” moments, the inspirations for his novels often came from life experience. Wayne’s first novel, *Kapitoil*, was inspired by his job of reading business school application essays, and his idea for *The Love Song of Jonny Valentine* occurred to him when he was tutoring young kids in Brooklyn and one of the girls was reading Miley Cyrus’ autobiography *Miles to Go*.

Wayne also mentioned that he is currently working on a third novel that will be more autobiographical than the previous two, as he feels better prepared to express his inner voice. Wayne’s new novel, published by Simon & Schuster, will be released in early 2016.



Photo Courtesy of Ching-Yun (Chloe) Hsu

# Henry Baer sweeps events, pool left clean

GOCALTECH.COM  
Actual Sports Content Editor

PASADENA, Calif. (Jan. 17, 2015) – Freshman Henry Baer (Lafayette, Calif. / Acalanes) swept all three of his events for the second time this season as the Caltech men's swimming and diving team came up just short down the stretch against rival Occidental College on Saturday morning.

Baer took first place in the 50 and 100 Free for the second time in three dual meets and senior Kevin Yu Seattle, Wash. / Lakeside) broke his own 100 Fly record, setting a new mark for the third consecutive year as the Beavers fell, 129-102.

"We were in it the whole way once again," Head Coach Jack Leavitt said. "This team is resilient and battles in every meet, we are just coming up a swim or two short."

The meet began with 3-meter diving, and with no Oxy divers competing, the Beavers picked up 13 automatic points thanks to senior Benjamin Grabowski (Lake Forest Park, Wash. / Inglemoor) and freshman Alexander Bourzutschky (Potomac, Md. / Montgomery Blair), who just learned a full lineup of dives to even compete two days prior. Grabowski posted a near-double-digit improvement on last week's performance, earning approximately 35 points on both his reverse somersault tuck and back somersault straight, while Bourzutschky scored 90.8 behind a solid forward somersault tuck.

"As any athlete knows, it can be hard to keep full focus when there's no opponent, but the divers did a fabulous job," Diving Coach Ute Zimmerman said. "This was only Alex's second week on the boards at all, and his first on the 3-meter with only one practice

Oxy immediately erased the margin with a 1-2 finish in the 200 Medley Relay and added 13 points in a hotly contested 1000 Free, with senior C.J. Culpepper (Leonardtown, Md. / Leonardtown) breaking the 11-minute mark for the first time in his career to take second. The Tigers extended their lead to 16 with a big haul in the 200 Free as junior Patric Eck (Fullerton, Calif. / Troy), narrowly touched out one of two Oxy swimmers for second but sophomore Chris Bradley (Half Moon Bay, Calif. / Serra) was out-touched himself to place fifth.

Baer quickly got Caltech back into the mix with a first-place finish in the 50 Free and Yu just missed second place by .02, trimming the deficit to 11. Oxy briefly stretched the lead back out to 18 with another win in the 200 IM, though a big time drop by Culpepper came up just short of third place.

The Beavers recovered from the blip to take first place in the next three straight events, rocketing up to within just one point heading into the final four events. Grabowski and Bourzutschky earned another 13 points on the 1-meter, with the rookie topping the 100-point mark for the second straight meet, and Yu broke his own record in the 100 Fly before Baer completed his individual double with a victory in the 100 Free.

"Diving spotted us some huge points, both to start the meet and heading into Backstroke to give us an opportunity to go ahead," Leavitt said. "Kevin setting the school record and Henry winning the 100 were obviously big too, and great to see."

The momentum would stop there, however, as Oxy posted a 1-2-3 finish in a tight 100 Backstroke and took the top two spots in the 500 Free and 100 Breast to surge ahead and put the meet out of reach.

The Beavers were determined not to leave with their heads down, though, and with the Free Relay remaining prepared to defend what has been their strongest event of the season at both 200 and 400 yards. Eck earned his team a one-second lead with the fastest leadoff leg in the pool, but Oxy's "A" relay pulled ahead by a body length on the second leg despite freshman Avikar Periwal (Potomac, Md. / Montgomery Blair) slapping down a 52.09. Bradley fought back onto the hip of the Tigers relay, leaving Baer with nearly a second to make up. The rookie did that and more, blazing through a 22.17 first 50 to regain the lead by the second turn and brought it home in a career-best 47.26.

"We had a lot of season and personal bests today," Leavitt said. "We started really well with C.J. and Avikar in the 1000, then Kevin set another school record in the Fly and Henry was huge winning the 100 and coming back in the 400 Relay as the anchor. We are really excited with where we are at with a little over a month before the SCIAAC Championships."

Leavitt and the Beavers will host a SCIAAC double-dual meet with Claremont-Mudd-Scripps College and Whittier College on Saturday, Jan. 24 at 10:30 a.m. Please note that all home meets will be held at Pasadena City College due to ongoing repairs to the Caltech competition pool.



Turn that frown upside down.

-http://gocaltech.com

## Women are wonderful

GOCALTECH.COM  
Actual Sports Content Editor

PASADENA, Calif. (Jan. 17, 2015) – Junior Alexandra Ilic (Austin, Texas / Westlake) picked up a pair of wins over Mills College and sophomore Zofii Kaczmarek (New York, N.Y. / Stuyvesant) took first on both boards as the Caltech women's swimming and diving team dropped a double-dual meet against Mills (117-68) and Occidental College (171-42) on Saturday morning.

"Alex was the highlight today with a couple of big wins against Mills," Head Coach Jack Leavitt said. "I'm really impressed with the work our divers and Ute have done too – they kept us in it early and are a huge part of this team."

Kaczmarek earned the Beavers nine points as the only competitor on the 3-meter board to start the day, nailing her backdive straight for a high score of 33.25. The 200 Medley Relay team took third against Oxy and second vs. Mills, and sophomore Kate Evans (Suwanee, Ga. / Lambert) added a couple points with a sixth-place overall finish in the 200 Free. Junior Grace Lee (Artesia, Calif. / Gretchen Whitney) and freshman Katherine Guo (Naperville, Ill. / Neuqua Valley) followed with points in the 50 Free, with Lee dropping a full second for a personal best.

Ilic stepped up in the 200 IM to beat out Mills' only competitor for nine points, and following another 13 points from Kaczmarek and freshman Robin Brown on the 1-meter board, did it again in the 100 Fly. Kaczmarek once again picked up big points on her backdive straight, while Brown was on pace



Alexandra Ilic is the most beautiful butterfly.

-http://gocaltech.com

to smash her previous high score through five dives but fell just short of the 100 mark.

"As any athlete knows, it can be hard to keep full focus when there's no opponent, but the divers did a fabulous job," Diving Coach Ute Zimmerman said. "Zofii really hit a couple of her dives and Robin is working hard to round out her list."

Senior Shalini Majumdar (Orinda, Calif. / Miramar) beat out two Mills swimmers in the 100 Free and Lee and Evans followed with scores in the 100 Back and 500 Free. Majumdar and Guo rounded out the Beavers' entries with points in the 100 Breast.

"We had lot of season and personal bests, especially with some swimming events for the first time this season," Leavitt said. "We put in a lot of work leading into this weekend, and it definitely showed."

Leavitt and the Beavers will host a SCIAAC double-dual meet with Claremont-Mudd-Scripps College and Whittier College on Saturday, Jan. 24 at 10:30 a.m. Please note that all home meets will be held at Pasadena City College due to ongoing repairs to the Caltech competition pool.

## Fencers go wild

GOCALTECH.COM  
Actual Sports Content Editor

PASADENA, Calif. (Jan. 16, 2015) – With six of its nine top fencers returning after a wildly successful 2013-14 campaign, the Caltech women's fencing team is primed to build on a brilliant fall performance, including a perfect 6-0 mark at the November Mini Mega Meet and three impressive individual efforts well at the Elite BladeRunner USFA ROC.

### Foil

Unquestionably the team's strongest weapon, all three members of the foil squad return, led by last year's top unranked finisher at the NCAA West Regional in senior Katie Fisher (Chapel Hill, N.C. / East Chapel Hill). Fisher recorded team-best win percentages in NCAA (41) and overall (53) competition last year and started this season a perfect 15-0 before placing a respectable 23rd at the BladeRunner. Junior Emilia Hernandez (Fairfield, Conn. / Hopkins School) and sophomore Stephanie Moon (Lilburn, Ga. / Gwinnett School of Math, Science and Tech) will team with Fisher after recording NCAA win percentages of 22 and 14, respectively, to form a potent squad which did not drop a matchup at the Mini Mega Meet.

### Epee

Sophomore Christina Meyer (Briarcliff Manor, N.Y. / Hackley School) will front the epee squad after becoming Caltech's first



Katie Fisher makes an excellent attempt at almost literally eliminating the competition.

-http://gocaltech.com

female at-large NCAA candidate in the epee as just a rookie. Meyer posted impressive win percentages in both NCAA (38) and overall (52) competition and beat multiple national "A" rated fencers in the NCAA West Regional. She will pair with classmate Constance Robinson (Cupertino, Calif. / Monta Vista), who also posted respectable win percentages of 20 and 21 despite entering the year without any fencing experience. Junior Sheila Lo (Arcadia, Calif. / Arcadia) can be expected to fill out the lineup and will have her work cut out for her after fencing just three bouts last season, but has shown well thus far as the team matched foil in winning all six matchups in November.

### Saber

The saber team may return just one fencer, but fortunately for the Beavers it is their top competitor in the weapon last season, junior Shi En Kim (Malaysia / Anderson Junior Coll.), who won 28 percent of her NCAA bouts and 38 percent overall.

# ASCIT Minutes

## ASCIT Board of Directors Meeting

Minutes for 14 January 2015. Taken by Sean McKenna.

**Officers Present:** Cat Jamshidi, Connor Rosen, Annie Chen, Patrick Nikong, Sean McKenna

**Guests:** Margaret Lee, Chris Dosen

**Call to Order:** 11:10

### President's Report (Cat):

- Library hours debate is still being sorted out. Cat, Connor, and Nima will be meeting with the relevant people next week, such as Cindy Weinstein, to discuss the merits of the plan to close SFL on weekends.
- Further debate regarding Dean Dabiri's article will, of course, be ongoing. ASCIT is hoping for a productive conversation. ASCIT trusts the Tech's judgment in printing responses to the article.
- Bylaw amendment voting will be happening on Thursday the 22nd. Announcement will go out on Thursday the 15th.

### Officer's Reports:

- **V.P. of Academic Affairs (ARC Chair: Nima):**
  - Absent
- **V.P. of Non-Academic Affairs (IHC Chair: Connor):**
  - By the next BOD meeting, Blacker President will be elected!
  - IHC will conduct a short survey regarding house GPA/graduation rates.
  - Reminder: Tech Express late hours are open. This is a pilot program, so if no one uses it, it may be shut down.
- **Director of Operations (Connie):**
  - Absent
- **Treasurer (Patrick):**
  - Reimbursements are happening. Hold tight.
  - Big I expenses are all collected and being processed.
  - January 23rd will be an ASCIT budget meeting for second term.
- **Social Director (Annie):**
  - Annie sent out a survey about ASCIT Formal.
  - Magic Mountain trip will be happening soon.
- **Secretary (Sean):**
  - Sent an email earlier regarding resolution changes and proposed bylaw amendments.

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. The next meeting will take place on January 23rd at 8pm in SAC 15.

**Meeting Adjourned: 12:10**

## REMINDER FROM THE COUNSELING CENTER:

*Meditation Mob*  
(drop-in mindfulness meditation group)

meets every Tuesday  
Bottom floor of Winnett  
from 12:00-12:50 pm

## Caltech Jazz Band Announces Performance

The Caltech Jazz Band, directed by Barb Catlin, presents its Guest Artist Concert on Saturday, January 31st at 8:00 pm in Beckman Auditorium.

Featured guest artist is Los Angeles native, Pete Christlieb, who is regarded as one of the true living legends of the tenor saxophone. His identifiable sound has been featured on iconic recordings from Natalie Cole's "Unforgettable" and Steely Dan's "Deacon Blues," to his years with Doc Severinson's Band on The Tonight Show with Johnny Carson.

Admission is \$10 for the general public and \$5 for Caltech staff, students and faculty.

For more information, please visit [bands.caltech.edu](http://bands.caltech.edu) or call (626) 395-3295.

CALTECH THEATER offers several chances to branch out and take chances, have fun and expand your social network this year!

**WANTED:** Actors, singers, musicians, technical personnel, and designers for new, original Caltech musical *Alice Through the Wormhole!* This musical is currently in the development phase with a world premiere run February 20-March 1, 2015!

If you are interested in any facet of production, including script development, contact Brian Brophy directly ([brophy@caltech.edu](mailto:brophy@caltech.edu)).

## Editors' Note on this week's "Opinion" Section:

Last week *The California Tech* was asked by John Dabiri, dean of undergraduate students, to run an article in order to get as many student eyes on a particular subject as possible. Not only did students respond to this article, but alumni and faculty also joined the discussion. The summary of this article boils down to the question in the title: Does the House System violate the Honor Code? This week *The Tech* received numerous responses to Dean Dabiri's article, and we have been diligently reading over the concerns and opinions of members of the Caltech community. The responses chosen to be published were selected based on the eloquence of the argument presented. As the editorial staff of *The Tech*, we were prudent in the responses we chose to publish this week. The views expressed in these responses and in Dean Dabiri's initial article do not reflect the views of *The Tech* staff. We are students who are often faced with presenting issues much bigger than ourselves, and appreciate your understanding in that we cannot always run every view due to space concerns. We value the use of journalism as an avenue of public discussion, and would like to thank the Caltech community for respecting our paper.

# Caltech Public Events Hiring Ushers

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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 [tech@caltech.edu](mailto:tech@caltech.edu). For subscription information, please send mail to "Subscriptions."

## Brad/Chad Business Tutorial: Business Strategy Part I

**BRAD CHATTERGOON**  
Contributing Writer

Hey, Techers. I'm a senior and it's still hard to believe that it's week 3 already. We're about a quarter of the way done with the term. Hope you got some rest over the MLK weekend. Feels like campus has been pretty dead these last couple weeks. Host some parties frosh. P/F and all that.

This week I will be formalizing and defining some ideas related to business strategy. These are terms that get thrown around fairly frequently, and I think that students taking BEM 106 might find this article helpful for analyzing those case studies.

**Fixed and Variable Costs:** Every company, especially manufacturing, has two types of costs in general. Fixed costs are ones which do not scale with production. Examples of these are rent for the facility, assuming the same facility and some absolute unit of time like per year or per quarter, and the cost of the equipment for the business. Variable costs increase as production increases. Examples are electricity costs and salaries, assuming that more man-hours are required for the increased production.

**Economies of Scale:** The average cost of output decreases as the number of units produced increases. Note that this is a relative decrease in cost and not an absolute one, e.g., the total cost to produce 100 units is not more than the total cost to produce 500 units. This phenomenon shows up for various potential reasons. Some possibilities are as follows: the increase in production will correspond to an increase in raw materials purchased and this can produce a discounted price from the supplier for the larger order; as

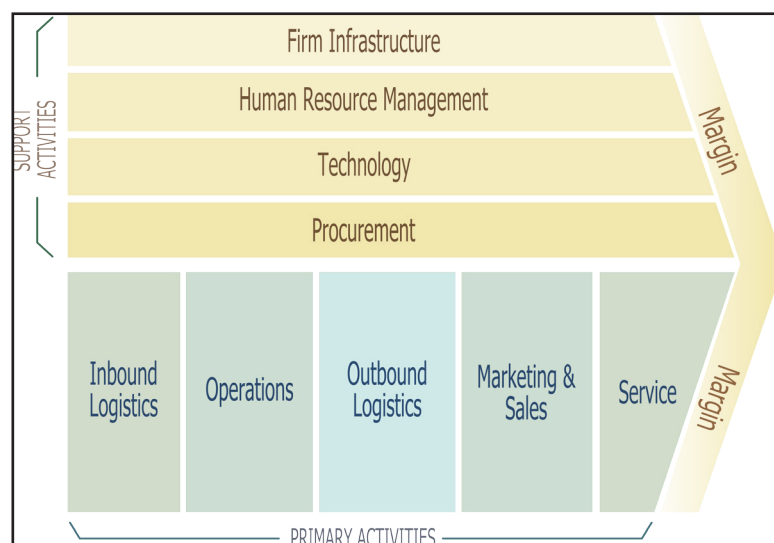
the number of the units increases, the fixed costs of the business get averaged over a larger number of products, which in turn means each product bears less cost and on average is cheaper to produce.

**Economies of Scope:** The production of more than one type of product by the same manufacturing facility allows for benefits to both units that would not be achieved by producing the two products separately. An example of what this would look like is a company which produces both televisions and blu-ray players sharing the same marketing or sales team. The cost of sales for both products is therefore distributed over just one sales division and there can even be benefits from bundling these two products together into the same sales team.

**Value Chain:** This refers to the chain of activities that a firm must pursue in order to produce a valuable service or product for the market. This is a very high level view of a firm's operations and can be divided into primary activities and secondary or supporting activities. The primary activities relate directly to the product or service and are ordered as follows: Inbound Logistics → Operations → Outbound Logistics → Marketing and Sales → Service. The second activities are designed to support the firm's primary activities and are listed as follows: Firm Infrastructure → Human Resource Management → Technology → Procurement (of raw materials or services).

That should give you some insight into how a firm works, but there is more to come. Next week I will be continuing with topics in business strategy.

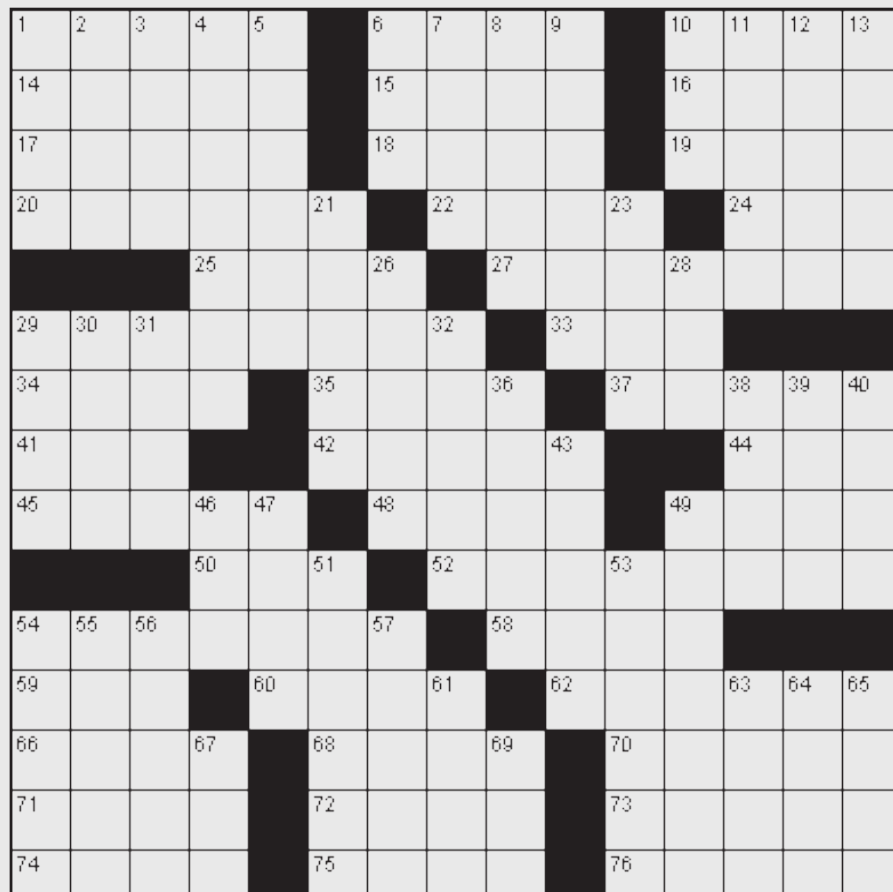
-Brad/Chad



A visual representation of Michael Porter's Value Chain shows primary and secondary (support) activities.

-http://en.wikipedia.org/

### Crossword



-puzzlechoice.com

**Across**

- 1. Limited in size or scope
- 6. Zeal
- 10. Desiccated
- 14. Kind of fairy
- 15. Stem of a tree
- 16. Impersonate
- 17. Assumed name
- 18. Item of footwear
- 19. Compass direction
- 20. Withstand
- 22. Nocturnal insect
- 24. Litigate
- 25. Helot
- 27. Blandish
- 29. Relating to heraldry
- 33. Epoch
- 34. Precipitation
- 35. Similar or related
- 37. Three note major or minor chord
- 41. Lodge
- 42. Large internal organ

- 44. Singing pair
- 45. Mix up or confuse
- 48. Rend
- 49. Portable shelter
- 50. Fuss
- 52. Embellish
- 54. Evil spirit (folklore)
- 58. Uncommon
- 59. Frozen water
- 60. Utter
- 62. Pale
- 66. Disposed of to a purchaser
- 68. Quality of voice
- 70. Near
- 71. Large woody plant
- 72. Tournament for amateurs and professionals
- 73. Tightly twisted cotton thread
- 74. Afresh
- 75. Tall woody perennial grass
- 76. Organic compound

**Down**

- 1. Box lightly
- 2. 1,760 yards
- 3. Center point of rotation
- 4. Communication channel
- 5. Smaller in size, amount or value
- 6. Flow out
- 7. Textile machine for weaving yarn
- 8. Remote in manner
- 9. Stinging plant
- 10. Simian
- 11. Cook with dry heat
- 12. Publish
- 13. Discourage
- 21. Test
- 23. Male red deer
- 26. Holy person
- 28. Mariner
- 29. Song for solo voice
- 30. Currency of South Africa
- 31. Psyche

- 32. Ashen
- 36. Not at any time
- 38. Notion
- 39. Female relative
- 40. Shower with love
- 43. Summarize briefly
- 46. Circuit
- 47. Redact
- 49. Latticework
- 51. Public speaker
- 53. Seer
- 54. Panorama
- 55. Fruit of the oak
- 56. Noisy riotous fight
- 57. Run off secretly to marry
- 61. Leg joint
- 63. Geographically disoriented
- 64. Small island
- 65. Cervid
- 67. Condensation
- 69. Finish

### Answers to previous Sudoku

1	7	6	2	4	3	9	5	8
4	5	9	6	7	8	3	2	1
8	2	3	1	5	9	6	4	7
2	4	5	3	1	7	8	6	9
9	3	1	8	6	2	5	7	4
7	6	8	4	9	5	2	1	3
3	1	2	7	8	6	4	9	5
5	8	4	9	2	1	7	3	6
6	9	7	5	3	4	1	8	2

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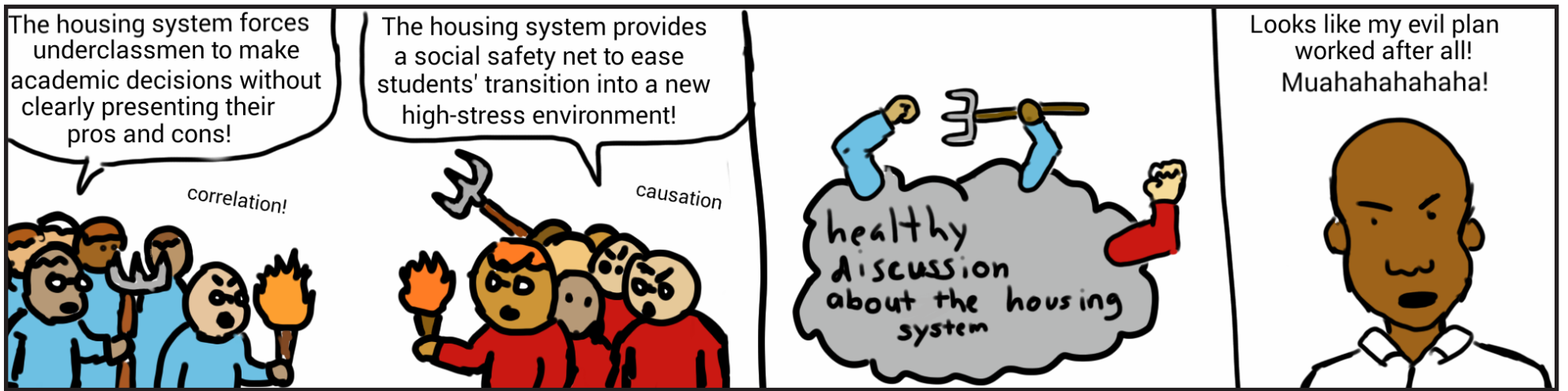
### Answers to previous crossword

	N	A	G		F	A	T	E		P	R	I	M				
S	O	L	E		A	V	I	D		R	A	D	I	O			
L	I	O	N		R	I	N	G		Y	I	E	L	D			
A	S	H	E	N		A	G	E	D		S	A	L	E			
T	E	A			O	G	R	E		A	W	E					
					J	O	E	Y		A	T	E		T	W	O	
A	S	S	E	N	T		G	R	A	B		R	I	M			
J	O	L	T			S	A	C		H	E	R	E				
A	L	E			O	P	U	S		B	R	O	K	E	N		
R	O	D			R	U	M			T	O	A	D				
					P	E	N			C	H	A	P		E	A	T
M	I	C	E			Y	E	A	R		T	H	E	R	E		
A	T	O	N	E			S	N	I	P		A	R	E	A		
R	E	L	A	Y			P	O	L	O		R	I	N	K		
					M	A	L	E		Y	E	L	P		P	E	A

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## Acquired Taste

Dr. Z



## Does the sorting hat violate the Decree for the Reasonable Restriction of underage sorcery?

SEVERUS SNAPE  
Hogwarts Headmaster

Dear Students of Hogwarts,

In recent years I have served as your Potions master, as your Defense Against the Dark Arts professor, and now as your Headmaster. In these roles, I have learned that effecting change at Hogwarts typically requires a clear answer to the question, "Professor Snape, why are you doing this to us?"

Alumni of Hogwarts occupy prominent positions throughout the wizarding community and often become alarmed when changes to time honored traditions of our institutions are proposed, even if these are the traditions most likely to be taken advantage of by miscreants. However, after deep consideration, I have realized that important questions need to be raised regarding the houses of Hogwarts. As you all know, the sorting into houses is carried out by the sorting hat using the spell of Gail and Shapley to access the magical powers of initiates to Hogwarts before they have become full members of the institution. We must ask whether this is a violation of the Decree for the Reasonable Restriction of Underage sorcery and we must ask whether it causes harm to the students to which it is applied. Such a suggestion should not be made without evidence.

Therefore consider this. There are two houses of Hogwarts which we shall from now on refer to as X house and Y house. You might ask why we must refer to these houses as X house and Y house. It is because of MERPA, the Magical Education Rights And Propriety Act. MERPA which has recently been passed by the Ministry of Magic requires that whenever we discuss the happenings at institutions of magical learning, whatever we say does not convey any useful information. The beauty of referring to these houses as the X house and the Y house, is that whatever I say, it will not be possible for you to determine which houses I am referring to.

Students in X House are highly likely to have a proper appreciation for the dark arts. They are more likely than students in other houses to have an aptitude for potion making. Their careers often turn to positions of serious responsibility within the ministry of magic. Students at Y House are unlikely to possess any practical magical skills preferring to leave their marks on Hogwarts on the quidditch pitch. If they go on to serve in the ministry at all, it is in insignificant postings like the muggle artifact department, and they're just as likely to take jobs in joke shops. A member of such a muggle institution as the UCLA football team is just as likely to have a significant impact on the future of magic as a member of the Y house.

The impact of belonging to X house and Y house is disparate and the available data do not indicate that this is caused by any other demographic factor. It is not because of differing proportion of muggle-born or pure-born in X house and Y house. It is not because of differing proportions of witches and wizards. It is not because the students in Y house all like to party while the students in X house spend all their spare hours reading arcane tomes in the Hogwarts library.

I have often said to my introductory potions classes, "Few of you will ever come to appreciate the gentle art and subtle science which is potion making." What I always meant was that students would not come to appreciate it because of their own failings, but now I see it is because the insidious sorting hat has placed them in Y house. Is it fair for us to do this to underage witches and wizards through no fault of their own?

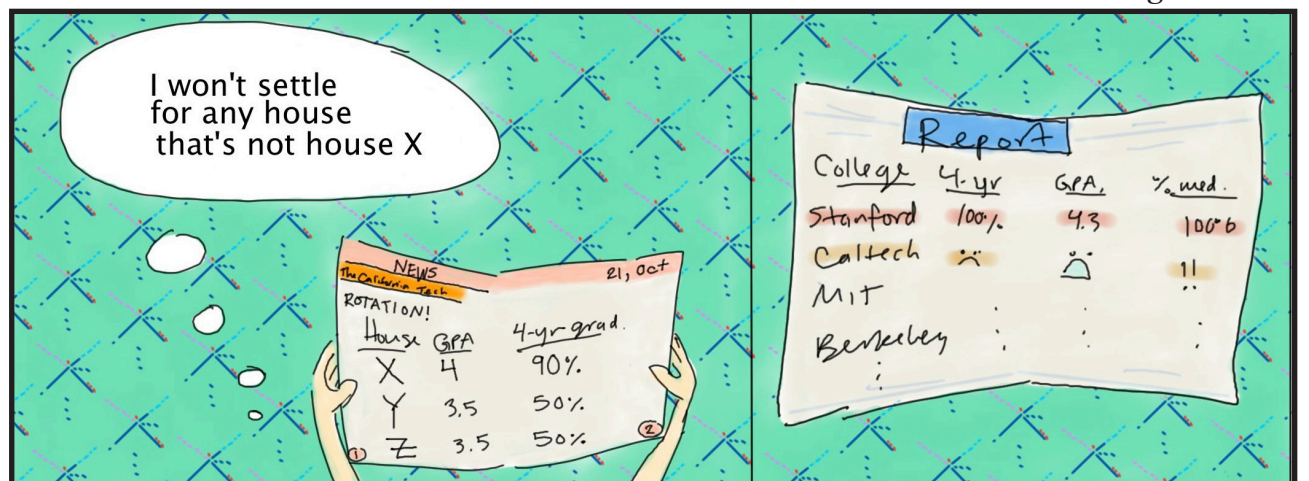
If you have constructive ideas about how to stop the sorting hat from destroying the art of potion-making, please drop me a line at [ssnape@hogwarts.edu](mailto:ssnape@hogwarts.edu).

## "Revising major life decisions at night in a bar"

Georgio Kraggman



Gigi Bodello



The California Tech

Caltech 40-58  
Pasadena, CA 91125