The California Tech

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Friend of the Court

Illustration Courtesy of Dana Verkouteren

CALTECH ALUMNI ASSOCIATION

Will Peterson (BS '02) was offered the chance every lawyer dreams of, to argue before the Supreme Court, but the former software engineer had less than four months to prepare his case.

When Will Peterson heard that a Supreme Court Justice was on the phone for him, he instinctively stood up and straightened his tie. Looking out the window of his Houston office, the 35-year-old attorney held the phone quietly for a few moments before Justice Antonin Scalia came on the line: A case was coming up, and the government had opted not to defend its position. Would Peterson be interested in arguing the case in their stead?

One week later, it was formally announced that Peterson would be presenting oral arguments before the nation's highest court—with less than 120 days to prepare.

The law might seem an unexpected career path for a Techer, but Peterson attributes part of his interest to J. Morgan Kousser, the William R. Kenan, Jr., Professor of History and Social Science at Caltech—specifically his class on the Supreme Court. "He made the justices approachable," Peterson said. "We understood the personalities, gained a sense of constitutional issues, and learned how to read the Court's opinions."

Kousser remembers long talks with Peterson on a number of subjects. "We disagreed politically on almost everything," Kousser laughed. "But we both came away having thought through our positions much more fully. He's one of the most memorable students I've ever learned from."

When Peterson went on to become a software developer for Microsoft, he continued to read court opinions out of interest, and soon decided to return to his home state and enter law school at the University of Texas at Austin. After graduating in 2008, he received coveted posts as a law clerk, first to Fifth Circuit Judge Edith Jones and then to Supreme Court Justice Clarence Thomas. He then joined the Houston-based law firm Beck Redden LLP, which specializes in complex civil trials and appeals.

The case Peterson was drafted on to, Reyes Mata v. Lynch, was a technical one revolving around immigration and jurisdiction.

When Noel Reyes Mata, an undocumented immigrant, was ordered deported, he appealed, first to the Board of Immigration, and when that failed, to the Fifth Circuit—but that court held that it lacked jurisdiction on the issue.

Reyes then appealed to the Supreme Court last fall. "The question essentially was: Did the Fifth Circuit have authority to reopen Mata's case or not?" Peterson said. While the Fifth Circuit said no, the government took the unusual stance of deciding not to defend its position.

Enter Peterson. "I did not have a client. My role was amicus curiae, or 'friend of the court,'" Peterson said. "My responsibility was to provide the justices with the strongest arguments for affirming the Fifth Circuit's judgment."

Of course, to do that, Peterson would have to learn everything about the case—in less than four months.

Defending a judgment that the government has abandoned is usually a losing battle, and indeed, the Supreme Court held 8-1 that the Fifth Circuit was in error and did in fact have jurisdiction. Mata himself may not be out of the woods—the case now heads back to the lower court for further rulings.

For Peterson, though, the experience was the opportunity of a lifetime. In a footnote to her opinion, Justice Kagan expressed the Court's gratitude that Peterson "ably discharged his responsibilities." Peterson believes that his Caltech education has in many ways contributed to his success.

"The law requires a very structured way of thinking, not unlike programming," he said, before pausing a beat. "Reconnecting with Caltech always reminds me that I'm not actually a successful lawyer, but instead just a failed engineer."

We'd object.

This article originally appeared in Techer*, published by the Caltech Alumni Association.*

News briefs from around the globe

A brief list of events from the past week, compiled by the editors

Kenyan president takes bold stance against ivory trafficking

100+ tons of confiscated ivory burned by president in effort to make a clear statement against elephant and rhino poaching for ivory sales [BBC]

Ancient Roman coins unearthed in Spain

1,300 pounds of Roman coins dating back to the third century A.D. were discovered by construction workers digging a trench in Spain [CNN]

First cruise in decades to leave for Cuba from US port in Miami

720-passenger ship set out to visit Havana, Cienfuegos and Santiago de Cuba [TIME]

Deaths in Aleppo lead Kerry to begin new bid for end to fighting

250+ civilians killed in past 10 days; John Kerry to attempt to bolster ceasefire [BBC]

Blast at Mexican chemical plant reminiscent of 2013 accident

28 confirmed dead after explosion occurs at Pemex chemical plant [CNN]

Graduate student receives grant

NEERA SHAH
Page Editor

How did you hear about the fellowship?

I work with the Blue Waters computer, and they had the fellowship advertised on their website and on posters in my building.

Which year are you in your graduate studies?

I'm currently in my fourth year, and the fellowship will cover me for my fifth (and hopefully last) year.

Which department and lab are you working in?

I'm in physics, and I'm working in Christian Ott's group.

Can you explain what your research is about and how this fellowship will help you with it?

My research focuses on trying to understand the mechanism that causes large stars to explode and on the consequences of two neutron stars colliding. These are both very important endeavors in astrophysics. Observers regularly watch stars explode as core-collapse supernovae, but when we put a star on a supercomputer and add in the best physics we can, they don't reliably explode — something is missing in our understanding or our models. Though a completely different phenomenon, colliding neutron stars use a lot of the same physics that is relevant in supernovae. These are cool because they might be able to explain where all the heavy elements (such as gold and platinum) come from, are prime candidates for generating gravitational waves for LIGO to detect and likely also explain the origin of gamma-ray bursts (a long-standing mystery which still has to be verified).

I work on computational models of these events. That is, I try to simulate them on supercomputers as accurately as possible to learn how they work, since we can see the inside of the simulations in detail and distance makes it very hard to observe most things about the real explosions. In particular, I work mostly on a small, but extremely challenging, part of the models — the movement of neutrinos through the systems while they're exploding. It's a huge problem and is incredibly computationally

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Caltech Y Column: Upcoming news and events

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.

Founded by students in 1916, the Y was organized to provide extracurricular activities planned and implemented by students as an opportunity to learn leadership skills and discover themselves. The mission of today's Y remains the same—to provide opportunities that will prepare students to become engaged, responsible citizens of the world. The Y seeks to broaden students' worldviews, raise social, ethical, and cultural awareness through teamwork, community engagement, activism, and leadership. 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. Caltech Y Photo Contest

Deadline to Submit Photos: Wednesday, May 11th

Want to win $100? Enter the Caltech Y Photo Contest!

For our centennial year, the Caltech Y will be holding our first ever Photo Contest. If you have participated in a Caltech Y program and are a current student, submit your photos for a chance to win. We're giving a $100 prize to the winner of each of the five photo contest categories.

The 5 categories come from the Caltech Y pillars of: Perspective, Adventure, Service, Civic Engagement, and Leadership

Photos should demonstrate the pillar in action. Photos of people are preferred, but exceptional scenic pictures will also be accepted. The deadline to submit photos is Wednesday, May 11th.

After the deadline, we select the finalists, upload them to our Facebook page, and our fans vote for their favorites to determine the winners. Winners will be announced on June 1st.

For more info on how to enter visit: http://caltechy.org/photo_contest/

2. World Fest

Monday, May 2nd - Friday, May 6th, 2016

Celebrating the cultural diversity of our campus community, World Fest is brought to you by the International Offices and the Caltech Y, in collaboration with a number of international and cultural student clubs.

Special Thanks To: Argentine Students, Association of Caltech Taiwanese (ACT), Armenian Student Association, Brazilian Students, Caltech C, Caltech International Spouse Club (CISC), Canadian Student Association, Filipino Student Association, French Club, German Students, Korean Students Association, Malaysian Students, Mexican Students, Nigerian Students, Organization of Associated Students from the Indian Subcontinent (OASIS), Peru Student Association, Singapore Student Society, Thai Student Association, Russian Club, Swiss Students, Vietnamese Student Association, and to all our student, staff, and community volunteers.

World Fest: Born on a Kibbutz

Tuesday, May 3rd | 12:00 - 1:00 PM | Avery Library | Lunch Provided

Ever wonder what it's like to grow up on a kibbutz? Come learn some of the history and evolution of this communal child rearing system in Israeli society, and find out what it was like to be raised on a kibbutz in the 1980s. Presented by Kim Banaji-Gal.

World Fest: International Food Fair

Wednesday, May 4th | 4:30 - 6:00 PM | Avery Courtyard | Tickets $5

For just $5, enjoy a taste of the world. Food provided by Caltech student clubs.

World Fest: So You Think You Know Mexico?

Thursday, May 5th | 12:00 - 1:00 PM | Avery Library | Lunch Provided

Experience Mexican history, culture and food in ways that reveal a diverse and dynamic country. Learn what is was like to grow up Mexican but be educated abroad and travel the world. Presented by Palas Atenea Policroniades Borraz, Corporate Partnership Officer with the Office of Technology Transfer and Corporate Partnerships.

World Fest: Exploring Modern Day South Africa: Social Inequality & Consequences

Friday, May 6th | 12:00 - 1:00 PM | Avery Library | Lunch Provided

Since the end of Apartheid 20 years ago, access to housing, education, and healthcare has become more disparate between socioeconomic classes in South Africa. Hear lessons learned about cultural awareness and sensitivity from a Caltech student s two-week study abroad opportunity in Cape Town. Presented by Halston Lim, recipient of a Mellon Mays Undergraduate Fellowship.

3. Caltech Y India Cultural Trip - Applications Available Now

December 10 - 20, 2016 | Cost: $950 | Applications Due Thursday, May 18th

The Caltech Y, in partnership with the SURF Program and IIT Gandhinagar (IITGN) in India, is coordinating a trip to Ahmedabad, India. Join us for an exciting trip as we explore India as an emerging nation and its potential role as a global leader in the context of its history and culture. The Caltech group will be hosted by IITGN and discussions and trips will be led by IITGN faculty.

The trip is open to undergraduate students only - sorry no graduate students. Applications can be found at http://caltechy.org/programs_services/areas/India/index.php and are due by Thursday, May 18th. Questions may be directed to caltechy@caltech.edu. Space is limited

4a. Pasadena LEARNS

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

Come volunteer at Madison, Jackson, and McKinley Elementary School! We are partnered with the Pasadena LEARNs program and work with their Science Olympiad team or do regular tutoring along with occasional hands-on science experiments. Transportation is provided. For more information and to RSVP, contact Vansh Kumar.

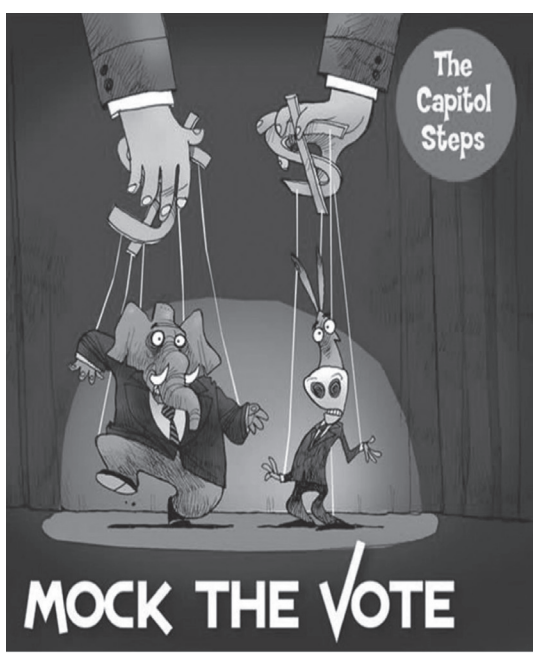
4b. Hathaway Sycamores

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

Volunteer at Hathaway-Sycamores, a group that supports local underprivileged students. There are a variety of ages and subjects being tutored. The service trip includes about an hour of travel time and 1.5 hours of tutoring. Transportation is included. For more info and to RSVP email Sherwood Richers at srichers@tapir.caltech.edu.

Caltechlive!
WEDNESDAY, MAY 11, 2016 • 8 p.m.
EARNEST C. WATSON LECTURE SERIES
SIGNED, SEALED, DELIVERED: HOW PROTEINS GET WHERE THEY'RE SUPPOSED TO GO IN CELLS

Miller's presentation will focus on his lab's efforts to computationally simulate the protein translocation process and to predict ways of controlling the targeting and delivery of proteins for therapeutic or biotechnological applications.
Tom Miller, Professor of Chemistry
Free Admission
Caltech's Beckman Auditorium
www.events.caltech.edu
CALTECH EMPLOYEES Federal Credit Union
Call campus x 4652 for information

Caltechlive!
SATURDAY, MAY 7, 2016 • 8 PM
SUNDAY, MAY 8, 2016 • 3:30 PM
Treat your Mother for an afternoon of hilarity!
Capitol Steps
Political Satire


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Bolton Rants: Bourbakis and bijective functions

BOLTON BAILEY
Contributing Writer

Continuing my train of thought on basic mathematical terminology that makes no sense, consider the terminology we use to talk about the following concepts: functions which map no two distinct domain elements to the same image, and functions for which the image of the domain under the function is exactly the range set.

The former are called "injections" or sometimes "one-to-one." The word "injection" makes absolutely no sense here. If you go to the doctor's office, and the doctor needs to give you some injections, does the doctor put those injections in different places of your body? No. The doctor picks the biggest vein (on your non-dominant arm) he or she can find and sticks with it. So if we think about the map from the vaccines you're receiving to the locations in which you receive them, then that map wouldn't be injective, would it? And why would we call a function a "one-to-one function" if some of the "ones" in the image space don't necessarily have "one" preimage? Really, a "one-to-one" map should be a map which pairs every element of the image set with exactly one preimage (which we would normally call a bijection, but I'll get back to that).

And what about the second type of function I mentioned, called "surjections" or "onto." First off, what does "surjection" even mean? The Bourbakis were probably sitting around one day and had a conversation like this:

Bourbaki 1: *Hmm, what's a good prefix we can use to indicate a function for which every element of the codomain is mapped to by at least one element of the domain?*

Bourbaki 2: *I know, "sur" —*

Bourbaki 3: *Ahh yes, because "sur" is French for "over," and we're French.*

Bourbaki 4: *But how is the concept of "over" tied to the notion we're trying to capture? Also, why are we speaking English if we are French?*

At which point the rest of the Bourbaki group probably kicked Bourbaki 4 out for making too much sense. And "onto"? Well that doesn't tell us anything about the function. Do functions which are not "onto" prepositionally relate to the image set in some other way? Are they "besideto" functions, or "undergo" functions?

Here's how it should be:

The first kind of function we talked about should be "collision free."

The second should be "covering."

Functions that are both of these should be "one-to-one" (because they actually are that way).

Nobel Laureate Vernon L. Smith speaks in HSS 50th Anniversary Lecture

CHLOE HSU
Page Editor

In honor of the HSS Division's 50th anniversary, Vernon L. Smith (Caltech, B.S. '49), delivered a special lecture titled "On Changing False Beliefs: Two Cases from Experimental Economics and Their Economic Implications" on Thursday, April 28. In the lecture, Smith addressed the importance of experiments in economics, using two examples of false confirmation bias in 1950s and 1980s.

Vernon Smith, who will turn 90 years old in January, is one of the two Caltech alumni who have been awarded the Nobel Prize in Economics. In 2002, he shared the Nobel Prize in Economics with Daniel Kahneman "for having established laboratory experiments as a tool in empirical economic analysis, especially in the study of alternative market mechanisms."

This year, Caltech's HSS Division celebrates its 50th anniversary with a lecture series featuring distinguished HSS alumni and faculty members. The upcoming lecture in the series will be presented by Charles S. Plott, professor of economics and political science at Caltech. Plott will speak on "Dynamics and Information Processing of Competitive Market Behavior: Science and Application of Extracting the Wisdom of Crowds" on Thursday, May 26.

Vernon L. Smith is the George L. Argyros Endowed Chair in Finance and Economics at Chapman University.

-http://hss.caltech.edu/

A chance to get off campus: A list of recommended cafés near Caltech

KSHITIJ GROVER
Contributing Writer

I'm one of those people who absolutely love working at cafés but don't have a car to venture out too far (and only a college budget, after all). Here's a small list of my favorites for the next time you want to leave SFL. Remember: If you don't take an Instagram picture, the trip never happened.

Intelligentsia:

I *really* started visiting Intelligentsia to work and read a couple weeks ago, and it tops my list in almost every respect. It's a little narrower than some of these other cafés, but they use and decorate the space nicely. If you're looking for something quick, it's perhaps not the place: not only will you be entranced by the vibe, but they churn out drinks with more care (and time) than most. I've rarely had coffee here (make no mistake — it's phenomenal), but I can wholeheartedly recommend their teas. If you end up trying the white peony, let me know how you like it! Protip: If you don't see an outlet, ask for their portable chargers.

"Remember: If you don't take an Instagram picture, the trip never happened."

Copa Vida:

This place has an amazing ambience and is *nearly always* lively. As for their drinks, I've tried the cold brew, a couple lattes and some loose-leaf brewed tea; the drinks aren't particularly spectacular, but you won't regret the $4 to $6 you're spending. I like to stick to the basic brewed coffee here. Remember to bring some nice headphones (or an extreme tolerance for a noisy background) if you're planning on working here. Protip: On the weekend, there is no Wi-Fi until 3 p.m., so it's a better place to relax with friends or do some offline reading.

Bird Pick Tea and Herb:

Come here if you're a tea addict. I just started really appreciating loose leaf tea (and here I was thinking boba was the only type of tea), and this place has opened up a wonderland. If you ever want to brew your own at home, or just sample the fancier teas at the café, they brew straight from loose leaf. In fact, I was told they have their own tea farms for some, while they get others straight after harvest in Japan, Taiwan and China. Protip: There's a parking lot very close by if you're driving.

Urth Caffé:

No list would be complete without Urth, which has the best outdoor ambience of any café in recent memory. Urth's rich drinks, while on the more expensive side, are undoubtedly worth their price. My favorite order is a black milk tea with mango on ice, but you can't go wrong with any of their lattes. Urth has an intangible going for it: even though it's not the best place to work, it's a great atmosphere for conversation and hanging out with friends. Protip: Be sure to snag an outdoor seat next to a standing heater — you won't regret it!

Omoto Cafe:

This motorcycle themed café deserves a shoutout — I found out about it just yesterday. It's right next to Afters Ice Cream on the corner of South Chester Avenue and East Green Street; don't be surprised if you've walked past it on the way to East Colorado Boulevard. If you're looking for a cheaper drink option and love croissant sandwiches, it's worth your while to try this out. I loved the music selection and was able to be very productive for the couple hours I was here. Protip: Don't touch the motorbike; just admire.

That's all for me this time; I didn't even get into the best boba places, but you'll just have to wait for part two!

Caltech launches public phase of $2B fundraising campaign

Members of the Caltech community celebrate Caltech's fundraising campaign during a festival held on Beckman Lawn on April 29. There were booths with interactive activities showcasing Caltech's research, food trucks and live entertainment provided by Black Crystal Wolf Kids.

Photos Courtesy of Nehaly Shah

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Women's water polo team caps off season of significant progress at SCIAC Championships

GOCALTECH.COM
Actual Sports Content Editor

REDLANDS, Calif. (Apr. 23, 2016) – Caltech women's water polo capped a season in which the program took major strides forward at the SCIAC Championships in Redlands this past Friday and Saturday.

Multiple Beavers recorded historic seasons in leading the new-look squad to a program-record-tying three wins and significant statistical improvements across the board. Junior Mary Boyajian claimed the single-season record for assists with 34, while freshman Brittany Percin scored the second-most goals in program history with 52 – just four shy of the record despite missing the team's first four games as she won the women's swimming & diving 200 Freestyle. A record five Beavers scored double-digit goals, with three – Percin, senior Soumya Kannan and freshman Katie Johnston – cracking the top-10 in single-season history. Kannan and Johnson also drew a potential-record 58 and 47 exclusions, respectively, with Kannan also notching 50 steals and 23 assists while Johnston added 30 assists.

"No — this is my ball. Stay away." -Soumya, probably.
Photo Courtesy of Michael L. Wong

Caltech 7, Occidental 16

Oxy jumped in front 7-0 after the first quarter before the Beavers matched the Tigers goal-for-goal in the second quarter to trail by seven at halftime. Another big quarter put the Tigers in front by five more before a late four-goal Caltech rally closed the gap to the final of nine. Kannan paced the Beavers with her fifth hat trick as she converted all three attempts, while senior Stephanie Wong also put away two of her three attempts. Percin rounded out the scoring with another brace and added an assist, with Boyajian tallying a pair as well and junior Sasha Zemsky notching one. Johnston posted an all-around line of one assist, three steals and two drawn exclusions.

Caltech 3, CLU 16

The Beavers found themselves in another early hole against the Regals, trailing 6-1 after the first quarter and 9-1 at halftime. Percin would net another pair of goals while Wong chipped in a third. Johnston contributed two assists and two steals while Kannan tallied four steals. Percin also made two steals, drew two exclusions and won all four sprints for her eighth perfect mark of the season in the finale.

As a team, Head Coach Jon Bonafede's Beavers scored a whopping 96 more goals than the previous season, converting shots almost twice as often and generating an additional 176 attempts. An additional 13 percent of those goals were assisted this spring, along with the offense drawing 57 more exclusions and committing 36 fewer turnovers. The defense improved tremendously as well, forcing 78 more steals and making 36 more field blocks, while freshman Elise Cutts made 168 saves at a 40 percent clip Wong chipped in with 55 saves at a 37 percent rate.

Tennis sends unprecedented 10 to Ojai Tournament

GOCALTECH.COM
Actual Sports Content Editor

OJAI, Calif. (Apr. 20, 2016) – An unprecedented 10 Caltech men's and women's tennis players are set to participate in the 116th Annual Ojai Valley Tournament beginning Thursday, Apr. 21.

"Uhhh I think I'm meant to hit the ball, but I'm not sure." — Kana.
-http://gocaltech.com

A program-record 12 Beavers made the field, and even with the withdrawal of two women's players, Caltech will field seven singles competitors and four doubles pairings between the Division III and Independent College Events.

Women

Freshman Kana Moriyama and sophomore Erin Wang will represent the women's team in a thin singles bracket. With just over 32 entrants in the field, Moriyama has been awarded an automatic bye into the Round of 32, where she will immediately be pitted against West Region No. 11 and #6 seed Mary Zhao (Pomona-Pitzer Colleges), who reached the semifinals of the Fall USTA/ITA West Regional as the #5 seed. Wang has a far more reasonable initial matchup in the Round of 64 against Hope College's Chelsea Bollinger, who is unranked in the NAIA West Region. A matchup with #2 seed Tatum Prudhomme from Division I Grand Canyon University looms in the next round, however. Both will be looking to match junior Sophia Chen, who won a close three-setter in last year's Round of 64.

The duo's doubles matchup is especially intriguing as the Beavers are set to square off against Christie Kurdys and Annette Sousa, the regular #3 pairing for Cal Lutheran University that beat Caltech's #3 team, 8-5, back on Feb. 12. Should the Beavers prevail in that tough matchup, they will go up against the #2 seed, which again includes Prudhomme and Susie Baklini of Grand Canyon.

Men

Already having made history on several fronts this season, the men's team will be looking to add yet another achievement to the list. The only men's player to win a single match in the tournament, assistant coach Devashish Joshi (he won once in both singles and doubles in 2012), will be on site to help their cause, but their work certainly is cut out for them.

Senior Rushikesh Joshi drew Pomona-Pitzer's Spencer Simonides, who has teamed with Graham Maassen to form the West Region's No. 2 doubles pairing but is unranked as a singles player, and would face West No. 9 and #6 seed Joey Dulle, the University of Redlands #2 singles player, in the next round should he advance.

Junior Ruthwick Pathireddy also pulled an unranked but dangerous opponent in Patrick Wildman, a CMS sophomore who has gone 4-0 in Division III competition this spring and reached the semifinals of the Fall ITA Regional, where he fell to teammate and eventual runner-up Glenn Hull. West No. 6 and #4 seed Chase Lipscomb (Redlands) awaits the winner in the Round of 32. Freshman Derik Nguyen faces a similar proposition in CMS freshman Julian Gordy, a Top-100 recruit who is also undefeated in limited action this spring and took Hull to three sets in the quarterfinals of the Fall ITA. The winner faces West No. 21 and #13 seed Gio Valdez in the next round.

Attention will surely be focused on the late-morning matchup between freshman Zixiao Li and Derek Levchenko, who is 7-3 between courts #5 and #6 for UCSC this spring but also impressed at the Fall ITA, having reached the Round of 16. The winner will be rewarded with a match against West No. 3 and #2 seed Maassen, who has recently risen to the top spot in the No. 10 Sagehens' lineup.

Rush, tired of running around the court, levitates instead.
-http://gocaltech.com

With limited entries available to the tournament, freshman Andre Liu will also compete in the Independent College bracket, where he opens with a Round of 32 matchup vs. NAIA West No. 3 and #8 seed Phillip Westwood of Biola University. The Eagles #1 singles player, Westwood posted a 6-2, 6-1 victory against the Beavers at the top court back on Feb. 27.

In doubles on Friday afternoon, Ruthwick and Nguyen open against Redlands' Sawyer Patterson and Thomas Suchodolski, who have gone just 2-4 at #3 doubles this spring while the Caltech duo scored an historic victory over the Bulldogs' #2 team just last Saturday. A victory means a quick turnaround to face the imposing Pomona-Pitzer West No. 6 and #5 seed team of Jonathan Kim and Jake Yasgoor, who have lost just twice this spring to a pair of Top-10 Division III foes.

Another Sagehens duo is already guaranteed to stand in the Beavers' way as Joshi and junior Ramsathwick Pathireddy have been matched up against freshman twins Joshua and Samuel Gearou, who have only appeared together sparingly this year but entered college as four- and three-star recruits, respectively. Redlands' top pairing, West No. 3 and #3 seed Joey Dulle and Jake Ly await the victors with the benefit of a bye.

Junior Morgan Lebby and Li will also represent Caltech in the Independent College draw. Their initial opponents are Biola's Westwood and Joe Turnquist, who are ranked No. 9 in the NAIA West Region but fell to the Pathireddy twins earlier this season, 9-8 (6). The winner will face the winner of #3 seed Hope and Whittier College's Sean Jardinico/David Stanko.

ASCIT Minutes

Meetings are every Wednesday at 4 p.m. in SAC 13

(Minutes are from last week, no new minutes taken)

ASCIT Board of Directors Meeting
Minutes for 21 April 2016. Taken by Phillip An.

Officers Present: Nima, Serena Delgadillo, Sean McKenna, Kalyn Chang, Annie Chen, Robin Brown

Call to Order: 12:05

President's Report (Nima):

- Schedule for transition:
  - Still will attend Joe Shepard Meetings and committee meetings until June

Officer's Reports:

- **V.P. of Academic Affairs (ARC Chair: Jay):**
  - Absent
- **V.P. of Non-Academic Affairs (IHC Chair: Bobby):**
  - Absent
- **Director of Operations (Sean):**
  - Will fix ASCIT screening room projector in Hawthorne soon
- **Treasurer (Kalyn):**
  - None
- **Social Director (Annie):**
  - Trivia night is tonight! (every other Thursday until Week 8)
- **Secretary (Phillip):**
  - None

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 **April 28th** at **12pm** in **Winnett Lounge.**

Meeting Adjourned: 12:27 pm

REMINDER FROM COUNSELING CENTER:

Meditation Mob

(drop-in mindfulness meditation group)

Meets every Tuesday
12:00-12:50 p.m.

Bottom floor of Winnett

VICE PROVOST'S OFFICE HOURS

Vice Provost, Chief Diversity Officer and Professor of English, Cindy Weinstein, holds regular office hours. This is an opportunity for undergraduate, graduate students and postdocs to meet and discuss what they'd like pertaining to the Council on Undergraduate Education, Caltech accreditation, the Staff and Faculty Consultation Center, Student-Faculty Programs, the Center for Teaching, Learning and Outreach, the Caltech Diversity Center and the libraries.

There are four appointments per hour, 15 min. each. Sign up the morning of the office hour in 104 Parsons Gates, Vice Provosts' Offices (x6339).

Spring Term Office Hours
12 p.m. - 1 p.m.

Friday, May 6
Thursday, May 12
Wednesday, May 18
Tuesday, May 24
Friday, June 3

Caltech Public Events

Hiring Ushers

Flexible hours.
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The California Tech

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Sherwood Richers receives fellowship from Blue Waters for use of supercomputer to create computational models

Continued from page 1

demanding, so pretty heavy approximations have to be made or even the world's biggest supercomputers would not be big enough to run the simulations. I am trying to combine two previously separate approximate transport methods (Monte Carlo and two-moment) to simulate the most accurate neutrino transport in three-dimensional simulations ever.

The fellowship provides some computer time on Blue Waters that is enough for some smaller projects. However, I still have to be involved in additional applications for time on supercomputers, including Blue Waters and several others. The fellowship also helps put me into contact with leaders in the fields of all kinds of computational science. Good contacts who can vouch for you are invaluable in any field. And, of course, the fellowship pays a stipend that is significantly higher than the Caltech stipend, and the chance to be one of the Blue Waters fellows is sure to help out in applications for future jobs (which are approaching way too fast!).

How did you get introduced to your research field and your specific project? Did you study something similar in undergrad? Where did you go for undergrad?

I went to the University of Virginia for my undergrad degree. I explored a whole lot of different research directions there, including laser atomic physics, carbon nanotubes, observational radio astronomy and simulations of astrophysical accretion disks. So, I suppose I got my start with computational astrophysics in my senior year when I worked with John Hawley, who is well known for co-discovering the importance of the "magnetorotational instability" in accretion disks (i.e., the disk of stuff circling and falling into black holes). I applied to graduate schools for both computational astrophysics and experimental atomic physics. When I got my first fellowship (Department of Energy Computational Science Graduate Fellowship, or DOE CSGF), I decided to go to Caltech and continue doing computational astrophysics. This specific project, i.e., using Monte Carlo techniques to simulate neutrino transport, started the summer after my first year in graduate school when I was visiting Lawrence Berkeley National Laboratory for a summer as part of my DOE CSGF fellowship. I worked with Dan Kasen and others to develop my code, and now I'm continuously improving it and making it do bigger and better things.

Will you have to travel to use this supercomputer?

Blue Waters is one of many supercomputers in the nation. Thank goodness, travel is not required to use the supercomputer. You just have to ssh (Secure Shell) into it, and you can access it via a command line interface from any computer (or even a cell phone). You set up the program you want to run, submit it to a queue and wait for the computer to run it (there are hundreds of people using any supercomputer at the same time, and there are rather sophisticated automated routines to determine who gets to use how much of the machine and when). It is in Illinois, and I have visited it by chance while at another conference, but it really is completely unnecessary unless you want a tour of the facility.

Is there anything else you'd like to add?

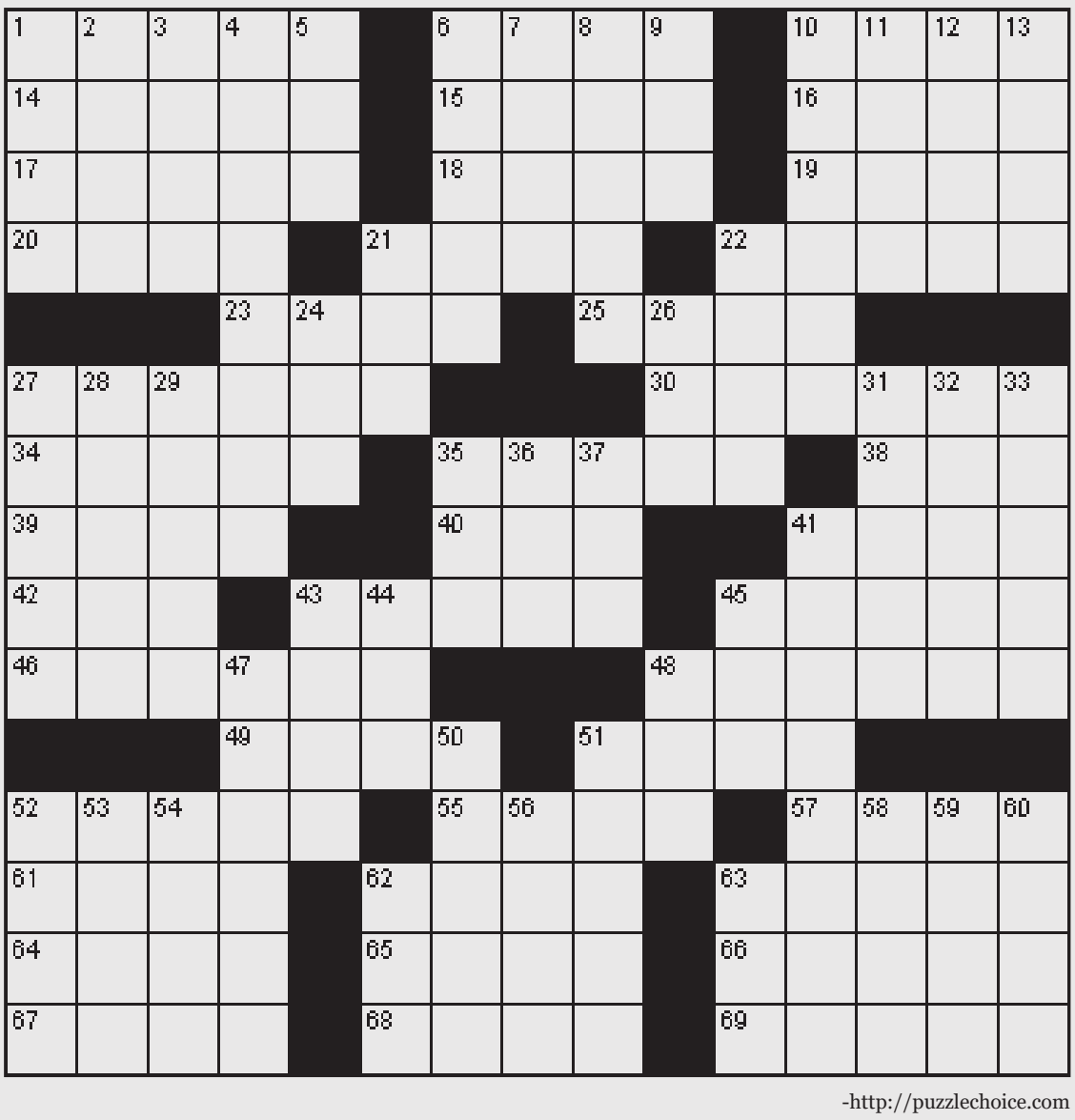
Here's some relevant information for fellowships and lots of other things. Get used to applying for everything you want, and getting rejected for most of it. That's certainly how it works for me, and I think it extends to most people. If you're constantly searching for opportunity, opportunity has a way of eventually finding you.

C|a|R|e|D
Caltech Alliance for Reflecting on Eating Disorders
Meets every other THURSDAY 12:00 - 1:00 PM
https://healthpromotion.caltech.edu

Crossword

Across
1. Stateroom
6. Impluse
10. Cot
14. Unaccompanied
15. Decant
16. Allay
17. Perch
18. Box lightly
19. Cause annoyance
20. Portable shelter
21. Visionary
22. Large passenger ship
23. Ecstatic
25. Rostrum
27. Inhabit
30. Vignette
34. Travesty
35. Wide open
38. Misery
39. Worry excessively
40. Excavate
41. Prima donna
42. The night before
43. Shelf
45. Cloth cap with no brim
46. Mend
48. Wellbeing
49. Evidence of previous injury
51. Small hard fruit
52. Aromatic substance
55. Molecule
57. Edible fat
61. Step
62. Report or maintain
63. Fairy
64. Metallic element
65. Wheelwork mechanism
66. Edible bulb
67. Look after
68. Merely
69. Easily irritated or annoyed

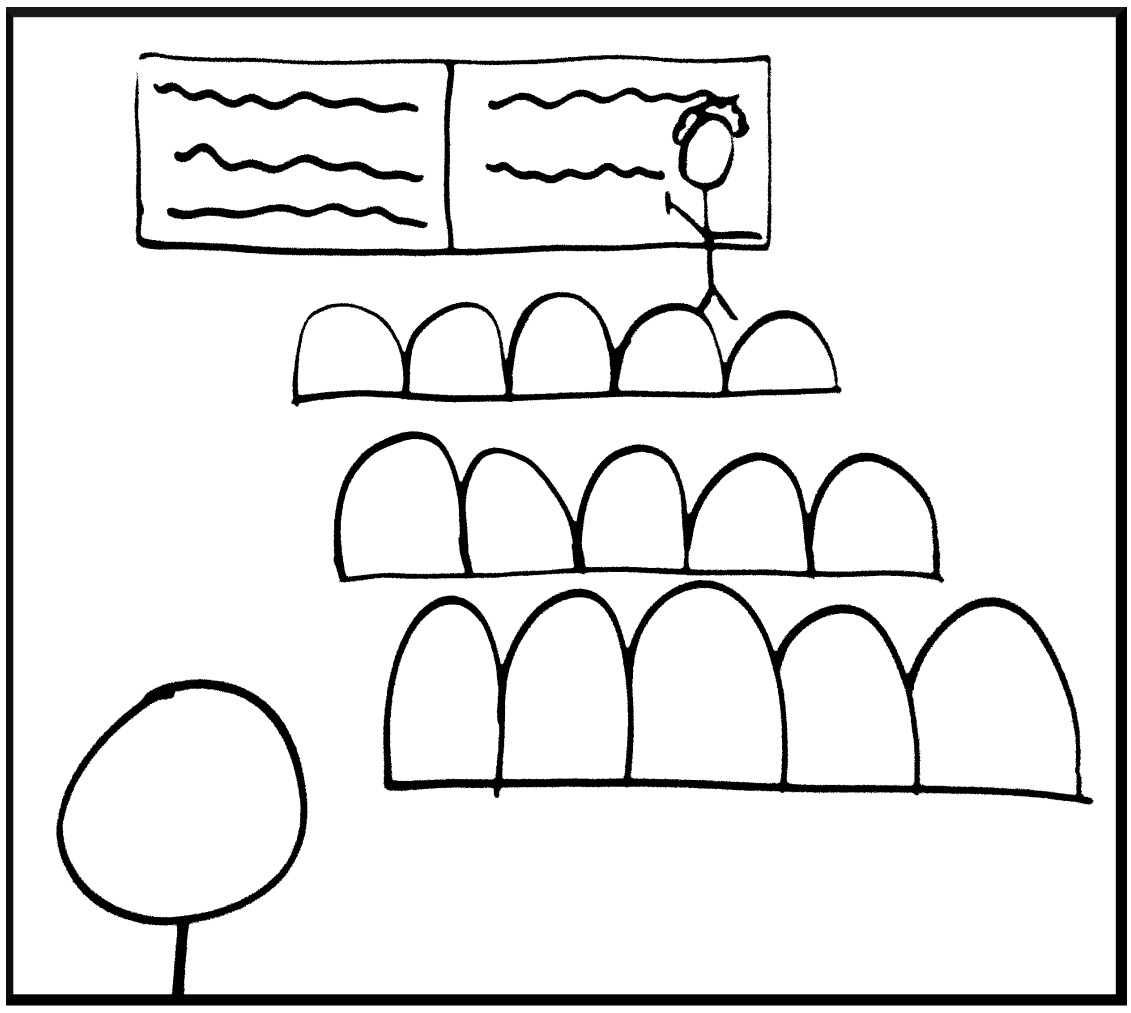
Down
1. Heavy open wagon
2. Succulent plant
3. Good fortune
4. Teach
5. Mesh
6. Knock over
7. A strong line
8. Keep watch over
9. Make a mistake
10. Color of ripe cherries
11. Precipitation
12. Small island
13. Ale
21. Secret agent
22. Resembling or similar to
24. Simian
26. Small snake
27. Bid
28. Sculpt
29. Go stealthily
31. Pirouette
32. Crave for something belonging to someone else
33. Uncultivated land with scrubby vegetation
35. Append
36. Two-wheeled horse-drawn carriage
37. Historic period
41. Time at which something must be completed
43. Parasitic insects
44. Epoch
45. Hymenopterous insect
47. Travel up
48. Stitched cloth border
50. Corvine bird
51. Regretful
52. Skewer for holding meat over a fire
53. Whittle
54. Visual representation
56. Small duck
58. Central point of rotation
59. Public violence
60. Abnegate
62. In the past
63. Cooking vessel



-http://puzzlechoice.com

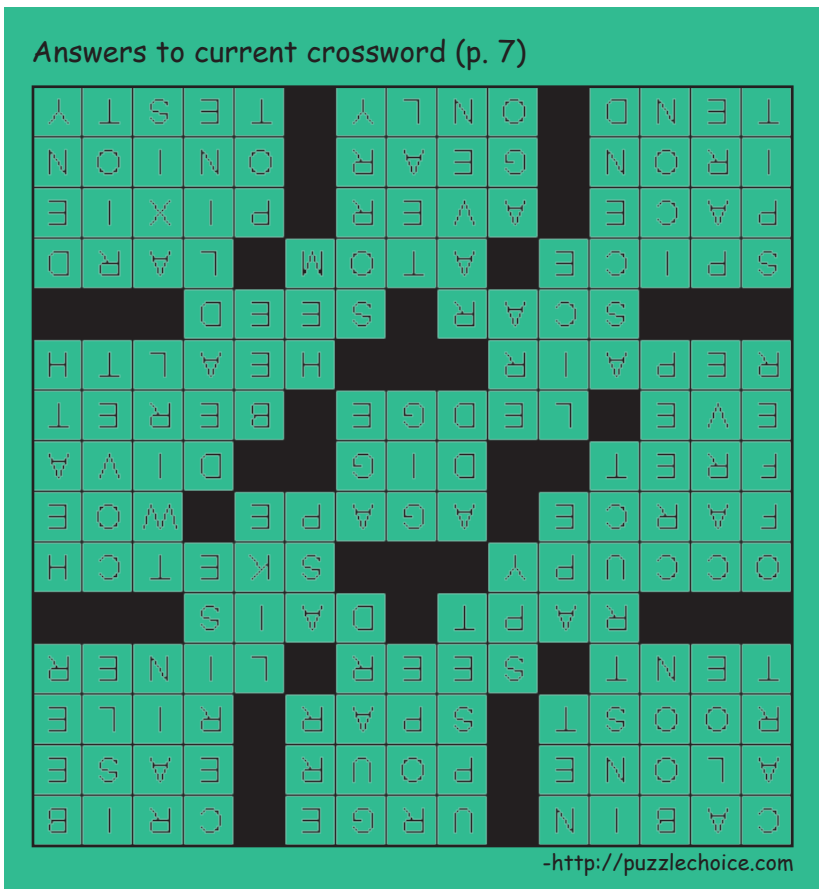
Sanity Considered Harmful

p-adic Larson



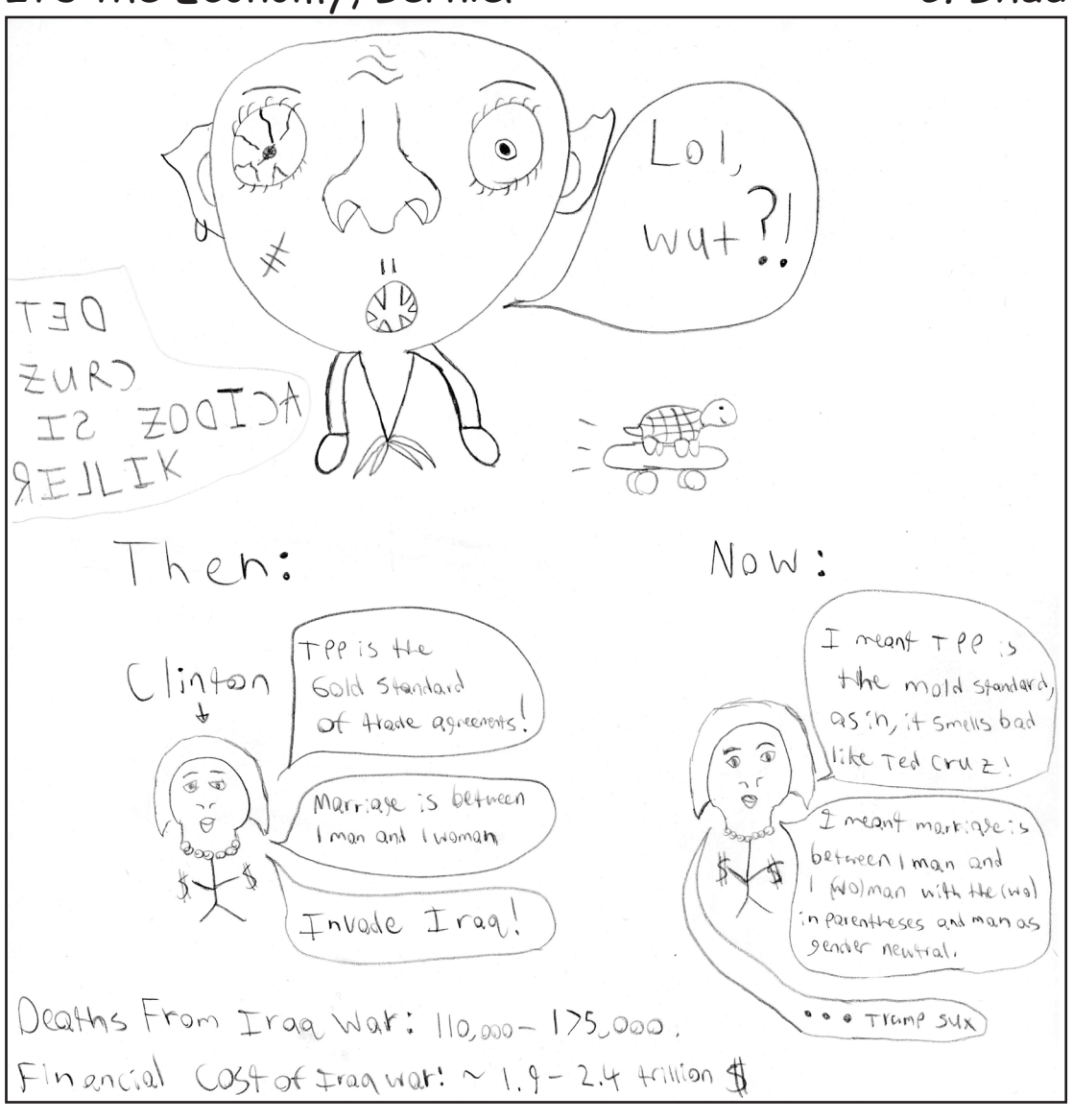
Tom's hopes of sneaking in late unnoticed were dashed when he discovered that the professor had already started lecturing - to an empty room.

Answers to current crossword (p. 7)



It's the Economy, Bernie!

C. Bhad



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