

Seniors Comar and Krupp awarded Watson Fellowships

DOUGLAS SMITH
Caltech Media Relations

This article was originally published online at caltech.edu

Caltech seniors Janani Mandayam Comar and Aaron Krupp have been named 2015 Thomas J. Watson Fellowship winners. Each fellowship is a grant of \$30,000 awarded to seniors graduating from a selected group of colleges. According to the Watson Foundation's website, "Fellows conceive original projects, execute them outside of the United States for one year and embrace the ensuing journey. They decide where to go, who to meet and when to change course." Fifty fellows were selected from a pool of nearly 700 candidates.

Janani Mandayam Comar is a biology major from Downers Grove, Illinois. During her Watson year abroad, she will be using Bharatanatyam, a classic dance form from the Indian state of Tamil Nadu, to reflect the experiences of various "outsider" communities. "Bharatanatyam was originally an exclusively female way of connecting with God," Comar said. "It was revived in the early 1900s as a way to tell stories through movement, and it is now danced

by both men and women, and is no longer confined to Indian communities."

In Australia, Comar will be working with the transgender community, whose situation is in some ways mirrored by traditional Indian culture. "Hindu mythology has a lot of transgender elements although the subject is taboo in modern Indian society," she said. In South Africa, home of the oldest expatriate Indian community in the world, Comar will investigate the role that Indian women played during apartheid, and in Malaysia, a country where human trafficking is still common, she will work with nongovernmental organizations that assist trafficked women in order to tell their stories. Finally, in Buenos Aires, she plans to join a studio teaching Bharatanatyam. "They're working in a foreign culture

where it had not previously been appreciated," she said. "The situation has parallels to women's efforts to break into STEM [science, technology, engineering, and mathematics] fields, especially in male-dominated societies like Argentina."

Comar will be entering an M.D./Ph.D. program on her return to the United States and plans to become a physician-scientist, eventually as a professor at a medical school.

Aaron Krupp of Needham, Massachusetts, is a mechanical engineering major. Over the next year, he will be working on low-

tech projects to improve the quality of life on the most basic level at sites in India, Southeast Asia and Nepal. In India, he plans to help manufacture durable roofing tiles out of recycled cardboard. He also will be working near refugee camps along the Thai-Myanmar border to help develop charcoal-based drinking-water filtration systems, and in Nepal, he will be assembling used bicycle parts into lever-driven, variable-torque all-terrain wheelchairs.

"I am getting involved in small components of projects that are already underway," said Krupp, who currently has no post-Watson plans. For example, the water filters are the product of a lab at North Carolina State University in Raleigh, where Krupp worked last summer, and the off-roading wheelchairs are an MIT project that he first encountered in 2013 while working at a hospital in rural Haiti after the magnitude-7.0 earthquake.



(From left) Janani Mandayam Comar and Aaron Krupp will join the 47th class of Watson fellows. The fellowship grants \$30,000 to graduating seniors to carry out unique global projects.

<http://www.caltech.edu/>

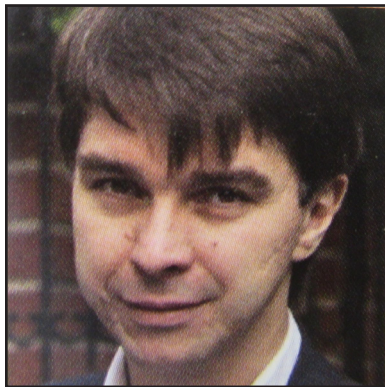
Distinguished Alumni honored during Seminar Day

NEERA SHAH
Editor-in-Chief

The 78th Annual Seminar Day took place on May 16 as part of Caltech's Alumni Reunion Weekend, which ran May 14-17. Research on campus is highlighted on Seminar Day and presented for alumni and their guests to learn about current Caltech endeavors. The Distinguished Alumni Awards were first presented in 1996 and are considered the highest honor bestowed by Caltech on its alumni. Recipients of the award are nominated by their fellow alumni and are recognized for achievements of noteworthy value and/or careers of noteworthy accomplishment.

The presentation of awards was during the General Session of Seminar Day; there were five other sessions throughout the day for guests to attend. Thomas F. Rosenbaum, president of Caltech and Sonja and William Davidow Presidential Chair and Professor of Physics, was the keynote speaker of the General Session and gave a brief talk on his physics research.

Sam Foster (B.S. '95), president of the Caltech Alumni Association,



started off the session with a welcome address. She commented on the ability of Seminar Day to offer alumni "a glimpse of the wonderful research that takes place on campus," adding that it is a testament to the mission of Caltech in committing "to upholding excellence, without compromise."

The first of the awardees was Stanislaw Smirnov (M.S. '95, Ph.D. '96, mathematics), who is currently a professor of mathematics at the University of Geneva and director of the National Center for Competence in Research's SwissMAP. He was recognized for "his achievements in mathematics, particularly in statistical physics. Smirnov produced the first rigorous proofs of conformal invariance

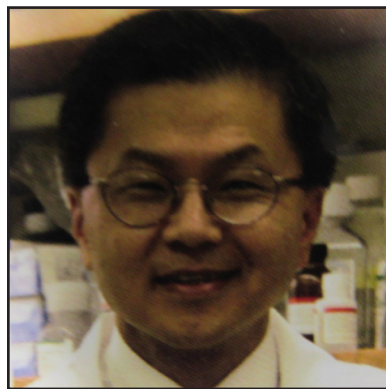
in lattice models, a discovery that has opened new directions in probability theory." He also



presented his research earlier during Reunion Weekend at his Distinguished Alumni Lecture, "The Ising Model of a Ferromagnet from 1920 to the Present Day." As he accepted his award, Smirnov thanked his fellow students for creating a sense of community and an atmosphere which he carries throughout his life.

Quyn-Thu Xuan Le (B.S. '89, biology and chemistry), Katharine Dexter McCormick & Stanley McCormick Memorial Professor and professor and chair of the department of radiation oncology at Stanford University, was honored "for her contributions to the

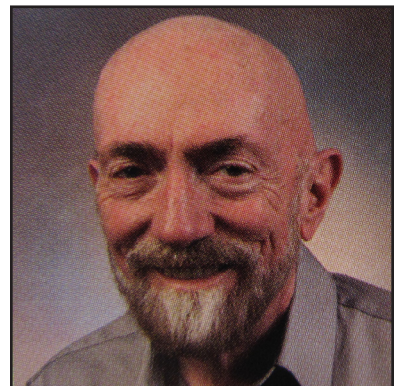
development of new radiotherapy treatment paradigms for cancer of the head, neck, and lungs, and for her leadership in medicine on prominent national panels and as chair of the department of



radiation oncology at Stanford University." During her time at Caltech, she was a three-time SURF student, participating in research in chemistry, biology and geography. Le spoke about how her education in physics at Caltech, along with its lessons on how to "think rationally, tackle a problem systematically, be tough and care for others" allowed her to bridge patient care and research in her career. She ended her speech with a thank-you to Caltech as she said, "I learned that college

can be important in molding one's character, and Caltech has truly molded mine."

The third distinguished alumnus was David D. Ho (B.S. '74, biology), director and chief executive officer at the Aaron Diamond AIDS Research Center and Irene Diamond Professor at



(From top) Stanislaw Smirnov, Quyn-Thu Xuan Le, David D. Ho and Kip S. Thorne are Caltech's Distinguished Alumni for 2015.

Photos Courtesy of Caltech Alumni Association

The Rockefeller University. Ho was nominated by his fellow alumni and selected for this honor "for his positive impact on human health." His extensive research on AIDS and HIV has "elucidated the

Continued on page 2

IN THIS
ISSUE

NEWS | PAGE 2
CALTECH Y COLUMN
ANNOUNCES UP-
COMING EVENTS

OPINION | PAGE 3
SEAN DISCUSSES
TRANS-PACIFIC PRO-
TECTIONISM

FEATURE | PAGE 4
ANNUAL OASIS SHOW
PRESENTS CULTURAL
PERFORMANCES

FEATURE | PAGE 7
UNDERGRADUATE
ACADEMIC AWARDS
GIVEN

Caltech Y Column: 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.

Ongoing and past programs hosted by the Y:

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

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

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

RISE Tutoring program (an afterschool math and science-focused tutoring program that serves public school students between grades 8 and 12)

Upcoming Events

1. Caltech Y India Cultural Trip - Applications Available Now

December 12th-22nd, 2015 | Cost: \$950 | Applications Due Thursday, May 28th by 5:00 PM

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 5 pm, Thursday, May 28th. Questions may be directed to caltechy@caltech.edu. Space is limited.

2. Matilda the Musical - Caltech Y Explore LA Series

Sunday | May 31st | 1:00 PM Showtime | Ahmanson Theater | \$30

Transportation is NOT provided

Ticket Sales begin at 1:00 PM, Friday, May 15th at the Caltech Y

Winner of 50 international awards, including four Tony Awards, *Matilda The Musical* is the story of an extraordinary girl who, armed with a vivid imagination and a sharp mind, dares to take a stand and change her own destiny.

Based on the beloved novel by Roald Dahl, *Matilda* continues to thrill sold-out audiences of all ages on Broadway and in London's West End. The *Wall Street Journal* says, "The makers of *Matilda* have done the

impossible triumphantly! It is smart, sweet, zany and stupendous fun."

This offer is for students only; however students purchasing tickets are permitted to purchase tickets for up to one guest each - and that guest can be a non-student. The Caltech Y is located in the Tyson House 505 South Wilson (Bldg. 128).

3a. Pasadena LEARNS

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

Come volunteer at Madison and Jackson 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 vkumar@caltech.edu. Eligible for Federal Work Study.

3b. Hathaway Sycamores

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

Volunteer at Hathaway-Sycamores, a group that supports local underprivileged but motivated high school 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. Eligible for Federal Work Study.



Students can buy tickets to see *Matilda the Musical* as part of the Caltech Y Explore LA Series. Photo Courtesy of Caltech Y

WRITE FOR THE CALIFORNIA TECH!

We accept reviews, opinion pieces, research, news stories, comics and more!

Email tech@caltech.edu with questions.

Rosenbaum talks research during annual Seminar Day

Continued from page 1

dynamic nature of HIV replication in infected persons, forming the foundation for combination antiretroviral therapy. This therapy protocol has led to reductions in AIDS-associated mortality in developed countries." Ho has published more than 400 papers on HIV/AIDS. He has a long-standing relationship with Caltech, as he grew up in Los Angeles, and he has previously spoken at Caltech as an alumnus once before - Ho was the commencement speaker in 1997. Interestingly, he entered Caltech with his sights set on math and physics but became drawn to life science after his first class in biology, which was taught by Bill Wooden.

The fourth awardee was Kip S. Thorne (B.S. '62, physics), Richard P. Feynman Professor of Theoretical Physics, emeritus, at Caltech. He was honored "for

his contributions to gravitational physics and astrophysics; [for] his mentorship of physics students, many of whom have become leaders in their fields; and for helping to increase the awareness of science through books and film." After receiving his award, Thorne spoke and emphasized the importance of the symbiotic

relationship between the faculty and students at Caltech.

After the four alumni were recognized, Rosenbaum talked about his research in his presentation, "Quantum Solutions to Complex Problems." He explored the basics of quantum physics and explained how it can be used to more efficiently calculate solutions. Applications ranged anywhere from the physics of studying magnets to the study of protein folding configurations. A short question-and-answer session was held at the end before other Seminar Day and Reunion Weekend activities continued.



Thomas F. Rosenbaum, president of Caltech and Sonja and William Davidow Presidential Chair and Professor of Physics, was the keynote speaker during the General Session.

[-http://www.caltech.edu](http://www.caltech.edu)

CALTECH presents

EARNEST C. WATSON LECTURE SERIES

Wednesday, May 20, 2015 / 8 p.m.

WATCHING PAINT DRY AND COLORS FADE: THE INTERSECTION OF ART AND SCIENCE



KATHERINE T. FABER, Simon Ramo Professor of Materials Science



Free Admission / Free Parking
Caltech's Beckman Auditorium
www.events.caltech.edu

Call campus x 4652 for information



Prefuse 73 expands his horizons on new release *Rivington Não Rio*

NAILEN MATSCHKE
Contributing Writer

It's a funny thing to see someone as influential to the current landscape of electronic music as Prefuse 73 putting out albums with little fanfare on an obscure record label 14 years after his first LP under the name released on Warp. Guillermo Scott Herren, the man behind Prefuse 73, has a remarkably long discography under several names stretching back to 1997, but is without a doubt best-known for his talents as a hip-hop producer, with albums such as his debut *Vocal Studies + Uprock Narratives* (my personal favorite) and its successor *One Word Extinguisher* regarded as some of the best instrumental hip-hop albums of all time. Drawing initially from his experience as a studio producer in Atlanta, Herren found success in the New York underground scene, collaborating with artists including El-P, Aesop Rock, and MF Doom back when it was reasonable to call them "underground."

During his time on Warp, Herren played a major role in expanding the label's roster, and was primarily responsible for the signing of Flying Lotus, whose commercial success now far eclipses that of Herren. Following a descent into increasingly obfuscated and fragmented music in the latter half of the '00s, not much had been heard from Herren until this year when he announced the release of two EPs (*Forsyth Gardens* and *Every Color of Darkness*) separated by an album, *Rivington Não Rio*, which came out on May 12. It's certainly not perfect, but it definitely shows Prefuse 73 going in the right direction, blending the

impeccable sampling skills and minute details of his earlier work with the textures and rhythms of more modern electronic acts, instead of clinging to the largely dead instrumental hip-hop aesthetic.

Clocking in at almost 44 minutes

despite its de-emphasis in his most recent albums, Herren's skill at writing interesting but not needlessly obtuse beats makes a strong showing throughout *Rivington Não Rio*. After the minute-long ethereal "Señora 95 (Intro)," the album transitions

clear vocals from labelmate Rob Crow topping all sorts of reversed and rhythmically undecipherable acoustic guitar and a shifting, layered beat, and despite sounding almost totally removed from hip-hop sensibilities, Herren sounds perfectly in his element. The song

song. One certainly expects an artist to stay within a limited range of instruments, but the issue here is that Prefuse 73 is fundamentally a beat maker, not a songwriter. This wasn't a problem on the material he's known for, since the tracks that didn't feature rappers were usually short enough to be carried by rhythmic variations and a simple chord progression, which has become more apparent to me now thanks to this album, and those that did relied on the vocal line to provide the theme ("Life Death" with Mikah 9 comes to mind). Here, though, the album feels crippled by an overall lack of significant variation as opposed to the constant minute changes that saturate each song, and a lack of any real musical ideas for the listener to hold on to. There is without a doubt an element of personal taste at play here, as my favorite songs tend to be those that get stuck in my head long enough for me to start making up my own variations on their melodies, but this is easily what the album is lacking most in.

Artists have to change, though, and even if *Rivington Não Rio* isn't stellar, I really do think that Prefuse 73 is doing so in a mature, enjoyable manner. There is a lot to digest in this album, and I'm nowhere close to being tired of it or short of new details to pick up on with each listen. I wish I had the space to go through and elaborate on all the little things that Herren completely nails with each track, but I think fans of Prefuse 73 will believe me when I say that this album absolutely lives up to the standard of complex, interesting music that he has set, and in some cases even surpasses it. I hope that he continues to refine this newfound style, as *Rivington Não Rio* already sounds like a more contemplative, possibly even more technically-skilled, version of Flying Lotus, and leaves plenty of room for improvement.



[-https://prefuse73.bandcamp.com](https://prefuse73.bandcamp.com)

across 11 tracks, this album is easily the Prefuse 73 LP with the highest average song length. As a result, one of my biggest questions leading up to this year's releases was how well his music would translate into longer-form compositions from its often collage-like structure, preferring to jump right into a variety of short, dense tracks instead of spending time building up singular ideas. Thankfully,

smoothly into "Applauded Assumptions," a track which would feel right at home on a Flying Lotus record. The glitchy beat underlying it is in 4/4 yet it feels like anything but, and is topped by lush, similarly off-kilter arrays of synthesizers that are mixed in with chopped-up vocals amongst a variety of other samples, and no section is repeated the same way twice. This is followed by "Quiet One," featuring crystal-

is very little to distinguish them. Even the four with prominent vocal features, which are all quite good as a result of how well each artist's contribution is integrated into the rest of the mix, would be difficult to identify without that aspect. Every song goes through wide dynamic ranges from enveloping seas of synths to skeletal deconstructions of percussion, but these core elements are found in *every single*

United States should avoid trans-Pacific protectionism

SEAN MCKENNA
Contributing Writer

Free trade. Sounds like a great idea, right? Open up access to foreign markets, allow the free movement of goods and services, and more closely link the countries of the world. Well, the thorn in the side of free trade agreements is one pesky central tenet of economic theory: competition. If the Japanese make better cars than America, then making them cheaper by cutting the United States' import tariff would only hurt the already weak American auto industry. And why give cheap Southeast Asian labor a further cost advantage over American labor?

Skepticism over the effects of competition is not unique to America. Across the globe, protectionism prevents the spread

of free trade. In the United States Senate this week, Democrats

wages and encourage offshoring of American jobs. Essentially, an

was signed in 2011. These criticisms may carry some weight, but they represent an incredibly short-sighted view on the potential held in both the American economy and the world economy.

The TPP deserves support because it promises to break down economic barriers and increase economic activity overall across the Pacific Rim. This does invite increased competition, but forcing America to become more competitive is not a bad thing. Competition fosters innovation. If the TPP causes 20th century-style manufacturing jobs to be lost, it is because those skills are irrelevant in the economy of the 21st century.

Our economy will modernize through competition. The areas where we are economically irrelevant will become clear when other countries outperform us in them. But America has the infrastructure and know-how to identify these weaknesses and correct them. It's good for Techers to breach the Caltech bubble and learn about life in the real world, which for most of us consists of Lake Avenue. The Trans-Pacific Partnership presents the United States with a similar opportunity to compare itself to, and learn from, other countries beyond its Pacific shores.

"Skepticism over the effects of competition is not unique in America. Across the globe, protectionism prevents the spread of free trade."

put up some resistance to the Trans-Pacific Partnership (TPP), a proposed trade agreement between the United States and 11 other Pacific Rim countries in Asia and South America. Although the resistance was largely symbolic, the TPP is by no means a foregone conclusion.

Currently, the deal is opposed by special interests and left-leaning politicians. They say that the TPP, like trade agreements before it, will put downward pressure on

agreement intended to help the economy could actually hurt it. An oft-cited piece of evidence is the increase in the U.S. trade deficit with South Korea since a trade deal

"It's good for Techers to breach the Caltech bubble and learn about life in the real world, which for most of us consists of Lake Avenue."

Life advice from a yoga instructor

KSHITIJ GROVER
Contributing Writer

Let me clear something up: *I am no yoga instructor.* I'm a flailing student. What follows, though, is perhaps the most unexpected insight I've ever gotten.

I'm currently trying out yoga classes, and it's one of the experiences this year that's pushed me out of my comfort zone (read: at a desk doing work).

Most people who think yoga immediately think of poses. And stretching. Maybe even tight-fit pants.

I've picked up on something different. One of my yoga instructors — we'll call him Pablo — has phenomenal lessons on life hidden in his style of talking. Some of his signature phrases follow.

“Are you ready? Okay, let's do it!”

After every new pose he shows us, he asks the class if we're ready to try it out. Then, without waiting a second, he answers himself. Most people get a kick out of this, but this is really an interesting approach to learning. Don't hesitate, or you'll never reach beyond familiarity. Enthusiasm is the key to growth.

“Happy Face...”

When you're stuck in bridge pose or you're really tight when doing pigeon pose, the last thing you think about is breathing or smiling. This is when Pablo always makes sure to say, “Happy face!” You know, it's the same thing with all our experiences in life. We forget to smile — to laugh at the little things. Oddly enough, even when we're not going through hell, we're stuck with a grim expression. It's not going to solve everything, but putting on a happy face can certainly change the way you look at things.

“Good thing we only have two sides!”

For everyone who thinks yoga can't be a cardio workout, you're mistaken. When you're holding pose after pose, it *can* get intense. Pablo jokes around, proclaiming how lucky we are to only have two sides to our body, and we only have to repeat things twice. This is perhaps the greatest lesson in finding a silver lining.

“Yoga is an invitation to be present, right here, right now.”

This may not seem like life advice at first — after all, he's talking about the art of yoga. I'm convinced that you can think about most enjoyable things this way. In order to really appreciate something, you have to give up everything that clouds your mind. You have to think of your activities as *invitations*, not *events*. Pablo isn't afraid to redefine the traditional sense of “yoga” — it's not about the poses; it's about how it can help you.

“I know ... it's torture, right?”

We all know Pablo is a yoga guru. He can do far more than anyone in the class, but he's quick to empathize with how different everyone is — how each pose could be distinctly difficult for everyone in the room. This recognition and empathy is miraculous in real life. It's *really not* torture for him, but he knows how to step into others' shoes. Make no mistake: this sense of genuine empathy is *the solution* to most global problems.

Going into Yoga, I was excited and anxious to stretch myself (hah). I may have emerged with a sore back and aching muscles, but just like most other things, this experience caught me by surprise. Keep listening, for what someone says might change your life.

OASIS holds annual cultural show



Meghana Pagadala and Meera Reghunathan perform SamoSASS.



Caltech Arya performs Thillana.



Anupama Lakshmanan introduces the club that hosted the program, Organization of the Associated Students of the Indian Subcontinent (OASIS).



Poonim Daya shows off some cultural clothing during the Fashion Show.



Caltech Dhamaka presents Namaste Pasadena: Part 2.

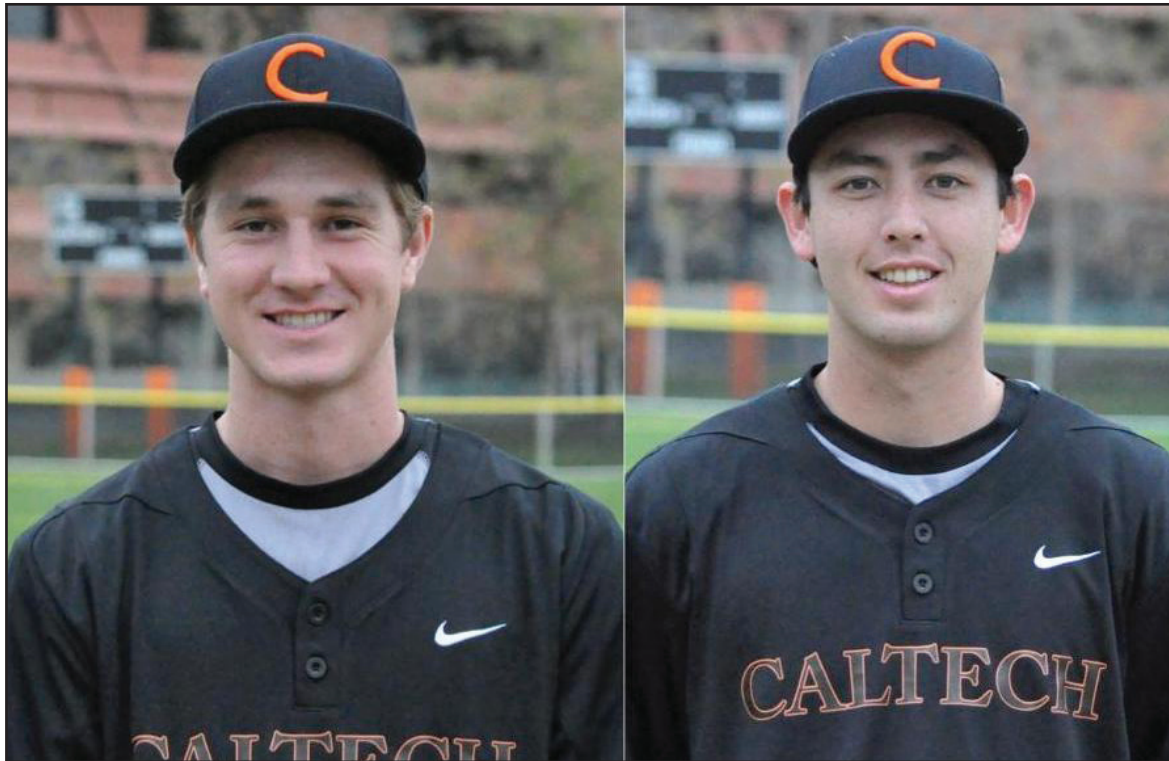


Caltech Dhamaka dances together during another scene of Namaste Pasadena: Part 2.



In this scene of Namaste Pasadena: Part 2, members of Caltech Dhamaka are talking during an English class.

Kearney, Casey named to All-SCIAC Second Team, Sportsmanship Team



(From left) Derek Kearney and Ryan Casey look pretty happy to have made All-SCIAC teams.

-<http://gocaltech.com>

GOCALTECH.COM

Actual Sports Content Editor

PASADENA, Calif. (May 11, 2015) – Caltech baseball senior Derek Kearney (Carlsbad, Calif. / La Costa Canyon) has been named Second Team All-SCIAC and senior Ryan Casey (Valencia, Calif. / Valencia) has been named to the All-Sportsmanship team, the conference office announced today.

Kearney compiled the third-lowest single season ERA in program history while limiting two of the top four offenses (Redlands and La Verne) in the conference to a single earned run in 15 innings. He also turned in another quality start vs. Occidental College (6.1 IP, 3 ER) and limited La Verne to just two earned runs over 5.1 innings in the SCIAC opener and went on to record his first career win in the second game of the doubleheader

sweep over Drew University. Kearney also tied the single-season mark for games started (13), ranked third in innings pitched (81.1) and tied-fourth in complete games (six). He becomes the first baseball player to be named All-Conference since 2012 and the first pitcher since 1991.

Casey finishes his career having played all 10 positions during his time at Caltech, including making starts at five separate spots this year alone. Valued as much for his versatility as his selfless willingness to contribute in any way he was needed, Casey led the team with a .959 fielding percentage as he made a team-low four errors while once again leading the squad in hit-by-pitches at the plate (eight) and sacrifice bunts (three) as one of just three Beavers to post an on-base percentage above .300 (.318).

Bhagavathi claims SCIAC title in 5,000-meter run

GOCALTECH.COM

Actual Sports Content Editor

LOS ANGELES (May 2, 2015) – Junior Aditya Bhagavathi (West Windsor, N.J. / West Windsor-Plainsboro North) stunned the field coming from fifth place in the seeding to win the 5,000-meter run at the SCIAC Championships on Saturday.

The cross country NCAA qualifier and multiple program record holder went from never having scored at the meet in his first two years to topping the field and earning the maximum 10 points for his squad. He is the program's first conference champion since Alex Lapides in 2011 and its first runner to claim a title since Matt Kiesz in 2008.

Bhagavathi and Head Coach Ben Raphelson had laid out a plan heading into the race and the junior executed it perfectly as everything else fell into place. A slow pace saw Bhagavathi running just off the shoulder of the leaders right up to the final lap and a half, when he made his move along with top-seeded John Fowler of Pomona-Pitzer to surge to the front. The pair put some distance between themselves and the two leading CMS runners before Bhagavathi overtook Fowler for good with his usual strong late kick, then held off CMS's second-seeded Joshua Sealand as the sophomore charged furiously down the stretch to win by .55 of a second.

"Aditya has learned a lot from his races so far this season and he applied that knowledge to how he executed Saturday's race," Raphelson said. "It was a lot of

fun to watch it all come together for him. It was a very exciting race against some very tough competition and is certainly a well-deserved achievement."

Seniors Eric Martin (The Woodlands, Texas / College Park) and Jared Forte (Lake Elsinore, Calif. / Elsinore) joined Bhagavathi as scorers in the 800-meter run and 3,000-meter steeplechase, respectively. Martin dropped .22 of a second in Friday's preliminaries to qualify fifth and shaved another .07 to place fourth in the finals, earning five points – the highest total of his career. In Friday's time final, Forte – running only his second career steeplechase – chopped off 18.5 seconds to clock a 9:50.21 (fourth-fastest in program history) and place seventh to earn two points. With the trio accumulating 17 combined points – the Beavers' highest total since 2008 – Caltech beat out Chapman University for eighth place at the Championships.

Senior Stephanie Reynolds (Tallahassee, Fla. / Lawton Chiles) enjoyed a brilliant 1,500-meter run of her own, dropping almost seven seconds to run the second-fastest time of her career (4:52.05) after dealing with several injuries to place ninth.

Senior Juan Adame (Sylmar, Calif. / Sylmar Math, Science and Tech.) cracked the all-time list in his first-ever 10,000-meter run, claiming the No. 4 spot with a 33:57. Junior Alex Anemogiannis (Atlanta, Ga. / Marist School) set a new personal best in the 5,000m by 12 seconds and junior Elliot Simon (Alexandria, Va. / Thomas Jefferson) and freshman

Christopher Haack (New York City, N.Y. / The Browning School) combined to shave 12 seconds off their previous bests in the 1,500m.

Several Beavers set personal and/or season bests in the field events as well. Senior Bridget Connor (Albuquerque, N.M. / Albuquerque Acad.) tied for the eighth-best mark in the pole vault but was slotted ninth on prior misses. She cleared a career-high mark of nine feet, seven inches in the pole vault, moving up from fifth on the all-time list to third, just five inches shy of the program record. Freshman Serena

Delgadillo (Denton, Texas / Texas Acad. of Math and Science) just managed to surpass her previous distance in the hammer, reaching 92 feet, 11 inches, while senior Ben Grabowski (Lake Forest Park, Wash. / Inglemoor) added 12 feet to his previous season-best mark in the javelin, pulling within 17 feet of his program record of 169 feet, seven inches. Junior Morgan Hill (San Diego, Calif. / Wasatch Acad.) tossed the hammer a season-best 122 feet, six inches while sophomore Jordan Bonilla (Weston, Fla. / Cypress Bay) hurled the discus an

additional 11 feet to reach a mark of 90 feet, four inches.

"Aditya's race certainly stands out, but there were tremendous performances across the board," Raphelson said. "Our teams put together a weekend of efforts that we can be proud of."

Raphelson and the Beavers will eye the Occidental Invitational on Saturday, May 9 and the Redlands Last Chance Invitational on Friday, May 15 as opportunities for a select few Beavers who are still pursuing NCAA qualification or significant personal achievements.



Can you say "beast"? Aditya Bhagavathi represented Caltech well, as always.

-<http://gocaltech.com>

Do you **like** sports? Are you *witty*? Then **YOU** should become the sports page contributor!
Email **tech@caltech.edu** for more details.

ASCIT Minutes

ASCIT Board of Directors Meeting

Minutes for 11 May 2015. Taken by Phillip An.

Officers Present: Sean McKenna, Connor Rosen, Nima Badizadegan, Phillip An, Kalyn Chang, Jay Pelekar, Annie Chen

Guests: None

Call to Order: 12:05

President's Report (Nima):

- Faculty board meeting is Today, 5/11/15 from 3-5pm in the Millikan board room. The undergraduate computer science option will be discussed.
- Bylaws: Vote to approve BOC bylaw amendments. Nima will send out the specific amendments (Section 3b2, Section 3d4) via email later today.
- Quorum established and motion passed 4-0 - proposed bylaw changes will be voted on in a week.
- BOC honor code summit at 7pm in Winnett Lounge today 5/11/15.

Officer's Reports:

- **V.P. of Academic Affairs (ARC Chair: Jay):**
 - ARC did not meet
- **V.P. of Non-Academic Affairs (IHC Chair: Cat - In Absentia):**
 - The IHC has finished our proposal for Student Affairs Admin about Rotation next Fall. They will be meeting this week to discuss it.
 - We made committee appointments yesterday, and will send out the list of representatives for the next academic year.
 - The IHC has strong feelings about Big I, and we intend to write a series of recommendations for future student leaders about how to execute the even in the future.
- **Director of Operations (Sean):**
 - Can Caltech Social events use ASCIT equipment (speakers)? Yes, as long as permission is granted and returned in a timely manner
 - Will inquire if ASCIT is involved in alumni events for this weekend
- **Treasurer (Kalyn):**
 - None
- **Social Director (Annie):**
 - Puppies are happening on June 6th
- **Secretary (Phillip):**
 - Tomorrow's meeting is canceled
 - Annelia meeting agenda will be sent out tomorrow

If anyone has any questions or concerns about a section of the minutes please email the appropriate officer. The 1st ten people to email gan@caltech.edu will receive \$100 from Jay Pelekar. We are happy to answer any questions. The next meeting will take place on May 19th at 12pm in Winnett Lounge.

Meeting Adjourned: 12:46 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

Professor and Vice Provost, Cindy Weinstein is holding office hours for graduate and undergraduate students. Professor Weinstein oversees the Council on Undergraduate Education, Caltech accreditation, the Staff and Faculty Consultation Center, Student-Faculty Programs, the Center for Teaching, Learning and Outreach and the libraries. She also has key involvement in diversity matters on campus.

Student Office Hours for Spring Term 2015:

Thursday, May 21, 12 p.m.-1 p.m.

Tuesday, May 26, 12 p.m.-1 p.m..

Wednesday, June 3, 12 p.m.-1 p.m.

There are four appointments per hour.

Sign up the day of the meeting starting at 11:30 a.m. in 104 Parsons Gates, Vice Provosts' Offices (x6339).

Caltech

Public Events

Hiring Ushers

Flexible hours.

No experience needed.

Outgoing Personality.

Pay Rate:

\$15 per hour

Caltech Students only!!

Contact: Adam Jacobo

626.395.5907

ajacobo@caltech.edu

The California Tech

Editors-in-Chief

Neera Shah
Nehaly Shah

Page Editors

Monica Enlow
Katherine Guo
Ching-Yun (Chloe) Hsu
Liz Lawler

Contributing Writers

Kshitij Grover
Nailen Matschke
Sean McKenna

Circulation Manager

Kit Chinetti

Advisor

Richard Kipling

Caltech 40-58, Pasadena, CA 91125
Contact tech@caltech.edu

The Tech is published weekly except during vacation and examination periods by the Associated Students of the California Institute of Technology, Inc. The opinions expressed herein are strictly those of the authors and advertisers.

Letters and submissions are welcome; e-mail submissions to tech@caltech.edu as plain-text attachments, including the author's name, by Friday of the week before publication. *The Tech* does accept anonymous contributions under special circumstances. The editors reserve the right to edit and abridge all submissions for any reason. All written work remains property of its author.

The advertising deadline is 5 PM Friday; all advertising should be submitted electronically or as camera-ready art, but *The Tech* can also do simple typesetting and arrangement. All advertising inquiries should be directed to the business manager at tech@caltech.edu. For subscription information, please send mail to "Subscriptions."

Undergraduates recognized at 2015 Academic Awards

BETH LARRANAGA
Dean's Office

The Housner, Froehlich, Haagen-Smit, Zeigler and Green Awards were presented during a luncheon hosted by Dean John O. Dabiri at the Athenaeum on May 8.

Adam Jermyn, a senior majoring physics, will receive this year's George W. Housner Prize for Academic Excellence and Original Research at commencement. This award is given to a senior or seniors in the upper 20% of their class for an outstanding piece of original scientific research.

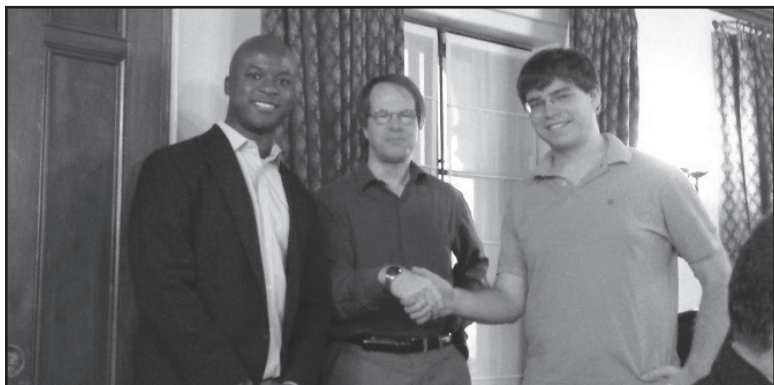
Kerry Betz, a senior in chemistry, and Boyu Fan, a senior in mechanical engineering, received the 2015 George W. and Bernice E. Green Prize. The Green Prize is awarded to an undergraduate or undergraduates in any class for original research, an original paper or essay, or other evidence of creative scholarship beyond the normal requirements of specific courses.

The Jack E. Froehlich Memorial Award is for outstanding juniors in

the top 5% of the class who show outstanding promise for a creative professional career. Paul Dieterle, a junior in applied physics, and Laksh Bhasin, a junior in physics, are this year's recipients.

Kurtis Carsch and Sylvia Hurlimann, both juniors in chemistry, are the recipients of the 2015 Arie J. Haagen-Smit Memorial Award, which is given to chemists or biologists who have shown academic promise and have made recognized contributions to Caltech.

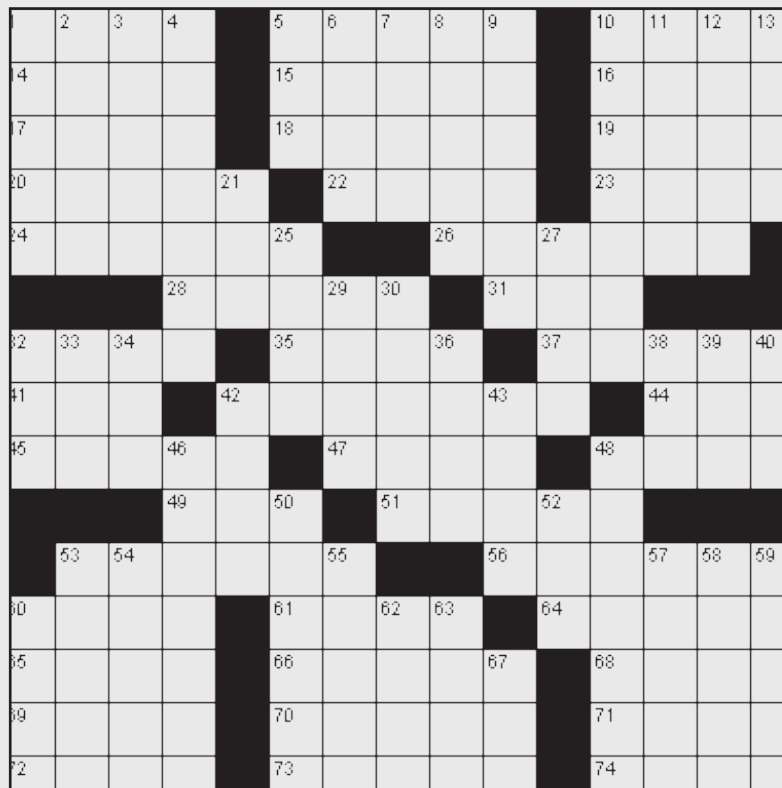
Cameron Voloshin, a sophomore in applied and computational mathematics and Laura Shou, a junior in mathematics, were chosen as the joint winners of the 2015 Fredrick J. Zeigler Memorial Award. This award recognizes sophomores or juniors studying pure or applied mathematics who have shown excellence in scholarship as demonstrated in class activities or in preparation of an original paper or essay in any subject area.



(From top) Dean Dabiri congratulates Adam Jermyn, Kerry Betz, Laksh Bhasin and Laura Shou, a few of those who were honored at the ceremony.

Photos Courtesy of Dean's Office

Crossword



-http://puzzlechoice.com

Across

- 1. Asterisk
- 5. Proverb
- 10. Hit sharply
- 14. Step
- 15. Concentrate
- 16. Heap
- 17. Halo
- 18. Keynote of a major or minor scale
- 19. Not in use
- 20. Tumble
- 22. Remake
- 23. Inert gas
- 24. Average
- 26. Straying from the right course
- 28. Moving very fast
- 31. Twitch
- 32. Appear
- 35. Metal fastener
- 37. Youngster
- 41. Paddle
- 42. Simple crane
- 44. On the sheltered side
- 45. Cheer for a great

performance

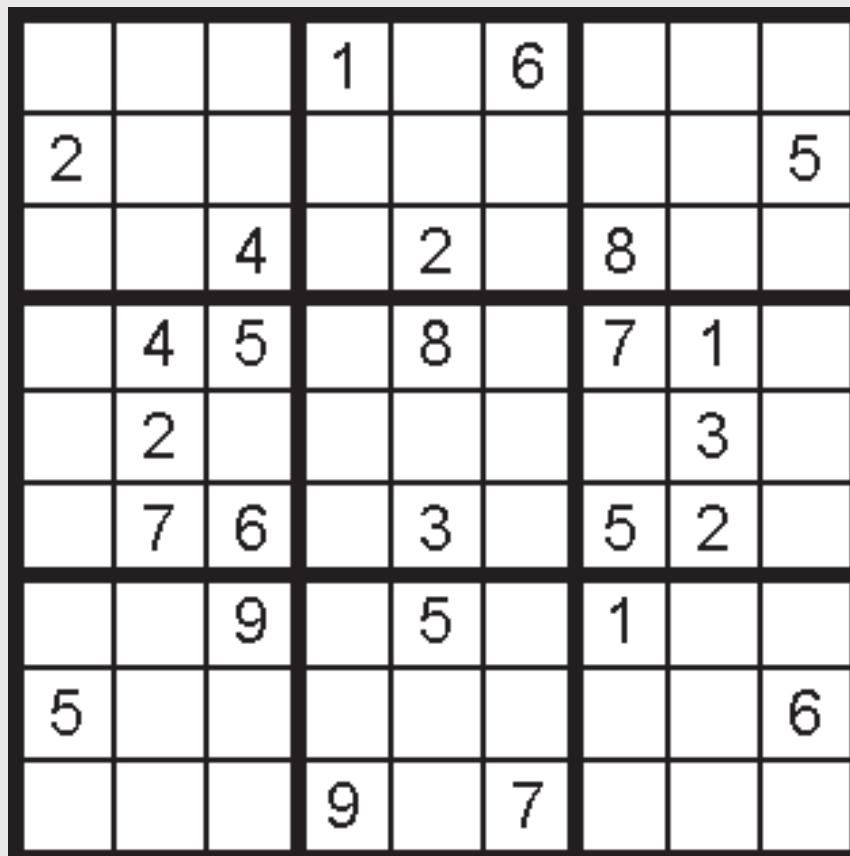
- 47. Short note
- 48. Scale drawing of a structure
- 49. Mischievous fairy
- 51. Greek letter
- 53. Kind of something
- 56. Bicycle for two
- 60. Main body of a written work
- 61. Wading bird
- 64. Flatbottom boat
- 65. One of a pair used to control a horse
- 66. Outspoken
- 68. Wheeled vehicle, can be pushed or pulled
- 69. Small island
- 70. Call forth
- 71. Pitcher
- 72. Look searchingly
- 73. Religious doctrine
- 74. Counter tenor

Down

- 1. Cramp
- 2. Fuscous
- 3. Strong and sharp
- 4. Pragmatism
- 5. Towards the stern or tail
- 6. Entrance
- 7. Skin condition
- 8. Usher
- 9. Accompany
- 10. Leaves eaten cooked or raw
- 11. Broaden
- 12. Distribute
- 13. Adolescent
- 21. Jurisprudence
- 25. Square root of eighty-one
- 27. Stack of hay
- 29. Cultivate by growing
- 30. Fatigued
- 32. Weep
- 33. Organ of hearing
- 34. Division of geological time

- 36. Green acidic fruit
- 38. Unwell
- 39. Pasture
- 40. Lair
- 42. Hemispherical roof
- 43. Young male horse
- 46. Wine merchant
- 48. Cure all
- 50. Type of hedge
- 52. Restaurant bill
- 53. Migratory aquatic birds
- 54. Expatriate
- 55. Higher up
- 57. Slow manner of speech
- 58. Type of heron
- 59. Paris subway system
- 60. Journey
- 62. Graphic symbol
- 63. A reason for wanting something done
- 67. Allow

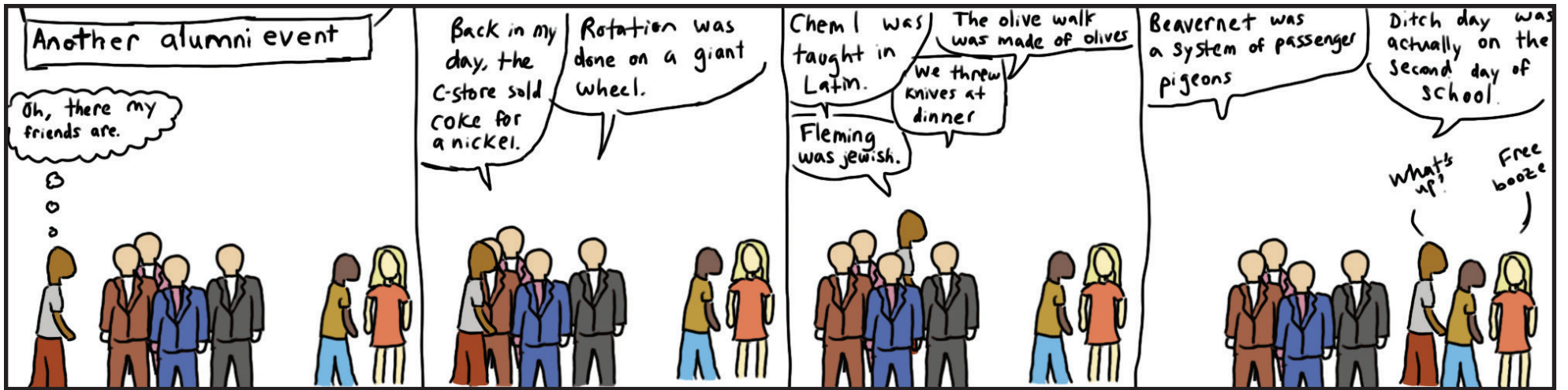
Sudoku



-http://puzzlechoice.com

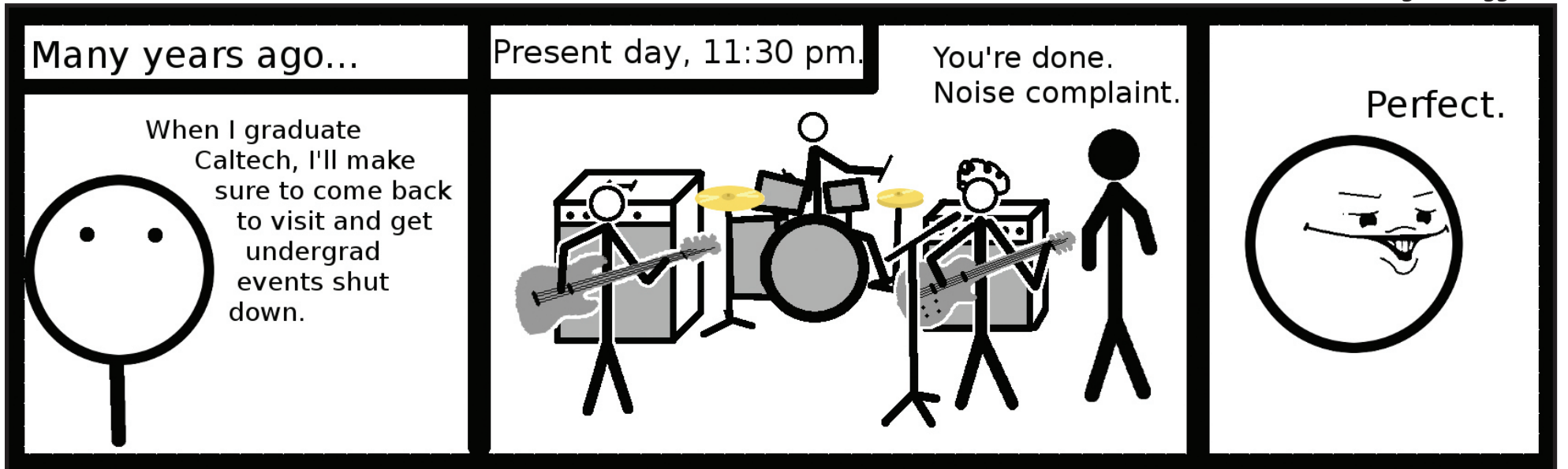
Acquired Taste

Dr. Z



"Money talks louder than heart."

Georgio Kraggman



Liz Lawler

Answers to previous Sudoku

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

-http://puzzlechoice.com

Answers to previous crossword

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

-http://puzzlechoice.com

The California Tech
 Caltech 40-58
 Pasadena, CA 91125