

Photo Credit: Daniel Nagles



## Caltech's Path to Decarbonization

Konnor von Emster  
News

*Editor's note: check out the online version of this story at [tech.caltech.edu](http://tech.caltech.edu) for hyperlinks that actually work!*

Feeling guilty about lowering the thermostat in your lab? You may not have to in the future. Last fall, President Rosenbaum endorsed a proposal from the Caltech Sustainability Advisory Council to [source carbon-free energy for campus](#). This proposal allows Caltech's sustainability office and facilities to electrify campus operations and begin negotiations with Pasadena Water and Power (PWP) to source green energy.

**"Despite Caltech's energy production being much cleaner than other universities, its portfolio relies on natural gas which has hampered Caltech's ability to decarbonize."**

Currently electricity and heating for campus is largely generated by the on-campus power plant, located next to the North Athletic Field. Opened in 2003, this cogeneration facility is the 3rd iteration of the on-campus power plant that was originally built in 1968 to provide energy independence to Caltech. The plant boasts a turbine engine capable of providing 12.5MW of electricity and heating which is distributed to the university through power lines and steam pipes.

While Caltech occasionally buys power from PWP to meet its peak demand (often in the height of the summer to power air-conditioning), the cogen facility sells energy back to PWP under reduced load so that Caltech is [energy neutral most years](#). Additional electricity is provided by several [Bloom fuel cells](#) on campus. Despite Caltech's energy production being much cleaner than [other universities](#), its portfolio relies on natural gas which has hampered Caltech's ability to decarbonize.

Due to pressure from the student body, Caltech formed a [Sustainability Advisory Council](#) in 2023 to oversee sustainability efforts and identify areas of improvement. The board of 12 includes Provost David Tirrell, Vice President and Chief Operating Officer Charlie Lane, and Chief Sustainability Offi-

cer John Onderdonk, among other stakeholders, students, and professors. Among the students' petitioned requests were carbon neutrality by 2050, integrated environmental education, and the reintroduction and expansion of reusable flatware and water bottles.

In line with these efforts, the sustainability council advised Caltech to buy carbon-free energy in collaboration with PWP. Caltech and PWP have a longstanding, collaborative relationship as Caltech is PWP's largest energy consumer and PWP's grid is literally married at Caltech with the only substation connecting east and west Pasadena right behind Red Door Cafe.

Caltech and PWP will eventually negotiate a power purchase agreement (PPA) for non-carbon energy. PWP currently [sources energy from a variety of installations](#) from around California and neighboring states. Among the renewables include solar installations in the Mojave desert, wind turbines in the Bay Area and Milford Utah, hydroelectric from Azusa and the Hoover Dam, landfill gas from various LA basin landfills, and geothermal from the Salton Sea basin. All combined, renewables accounted for 40% of Pasadena's energy use in 2022.

Contrary to Caltech's green initiatives, a coal installation in Utah accounts for almost a quarter of Pasadena's power usage. Natural gas has become the preferred option for remaining demand with turbines similar to Caltech's supplying power through the Glenarm Power Plant next to the beginning of hwy 110. Yet, there is hope for Pasadena as its coal contract expires in 2025 and it has committed to [100% carbon-free energy by 2030](#). California has imposed additional restrictions on public utilities which requires them to decarbonize by 2045.

Similar decarbonization efforts are underway at many [other universities](#) including a few that are already [carbon neutral](#) including Stanford, American

University in D.C., and several colleges in the northeast. Approaches vary among universities with some opting for carbon offsets ([with dubious efficacy](#)), others installing more efficient power plants to replace [dated infrastructure and dirty fuels](#), and still others signing PPAs that provide resources to build off campus energy production or buy renewable energy from a specific renewable energy installation. The completion of two photovoltaic installations in central California through PPAs brought Stanford to [100% renewable in 2022](#).

Yet, Caltech's uniqueness falls in its desire not just to decarbonize but to match our current energy needs. In an interview with Campus Sustainability Officer John Onderdonk, he mentioned "our approach to sustainability is true to Caltech's culture - we want to understand the dynamics of the challenge and engineer around it." Caltech can buy carbon offsets or clean energy from PWP immediately, but these have questionable efficacy and would not sustainably integrate into Caltech's infrastructure.

The engineering problem can be split into two parts: Caltech's unique energy demand and its steam powered infrastructure. First, Caltech's constant energy demand is different from the rest of the grid whose energy needs are low at night and high during the day. Research labs are notoriously consistent power users as many research applications such as air handling, freezers, servers, and vivariums require 24/7 electricity. Both the demands of Caltech and Pasadena are at odds with solar and wind supplies which often produce during narrow hours of the day, thus mandating the use of batteries for their sustained use.

**"Caltech will eventually negotiate a power purchase agreement for non-carbon energy."**

Consistent producers of electricity such as geothermal, hydroelectric, nuclear, and wave match Caltech's largely unyielding power demands.

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## Class of 2028 Regular Decision Acceptances Released

Michael Gutierrez  
News

Last Saturday at 11:22am, Regular Decision acceptance letters went out to Caltech's Class of 2028.

### Quick facts:

- Caltech received approximately 13,000 total applications for Class of 2028, comparable to Class of 2027's 13,136 applications.
- This is the fourth undergraduate class since Caltech stopped accepting SAT/ACT scores.
- This is the second year since Caltech switched to Restrictive Early Action (REA).
- The total number of students accepted into the Class of 2028 has not been announced yet, but according to the Admissions Office, it is less than last year. (412 students were accepted into the Class of 2027 last year.)
- This is the least number of students admitted into a Caltech class in the past 30+ years (the *Tech* only has data beginning 1993 - see page 3 of this issue for details)
- 25 Questbridge students were admitted through the National College Match. (Compared to 35 in the Class of 2027.)

- The target class size is 230, according to the decision letters sent by Chief Admissions Officer Ashley Pallie. They expect less than that number to commit to Caltech by May 1st, and plan to fill the remainder of spots from the waitlist.

- The graduating Class of 2024 had an initial size of 225. If the target of 230 students is reached for Class of 2028, the size of the student body will not significantly change.

- Discover Caltech ("DiscoTech"), formerly known as Prefrosh Weekend, will take place April 16-19 (Tue-Fri). As previously reported in the *Tech*, the Admissions Office plans to invite roughly 200 prefrosh to campus for the event. All DiscoTech hosts, including roommates, will be compensated with \$20 in Amazon credit per prefrosh hosted.

- All you need to do to be a host:
  - \* Pick up your DiscoTech student on Tuesday or Wednesday evening
  - \* Give them space to sleep on your floor
  - \* THAT'S IT!

graphs shown on page 3

## DISCOTECH

### overnight hosts

Discover Caltech 2024 (DiscoTech) will be happening **Tuesday, April 16 - Friday, April 19, 2024** and we are looking for overnight hosts for two or three nights!

The deadline to sign up to be an overnight host is Friday, March 15 at 5:00 PM PST.

As a thank you, we will provide the following:

Hosts will receive a \$20 Amazon gift card!

If you have a roommate, they will receive a \$20 gift card as well!

If you host multiple DiscoTech attendees, you and your roommate will each receive an additional \$20 per additional student hosted.

### Inside This Issue:

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# Tests Find No Active Asbestos Sources in Scott Brown Gym



Lilia Arrizabalaga News

The athletics facilities here at Caltech include 2 main gymnasiums: Scott Brown Gym and the newer Braun Athletics Facility. Brown Gym has been undergoing renovations, and after some of these renovations, the main entrance to the facilities was temporarily relocated from Braun to Brown. However, on December 5th, Caltech's Environmental, Health, and Safety (EHS) Office was notified that a sample of dust collected in a private office in Brown returned detectable amounts of asbestos. Caltech then closed access to Brown pending a full investigation and moved the entrance back to Braun.

On December 6th a certified asbestos inspector performed air and surface tests throughout Brown and determined that there was no detectable asbestos in the air and the locker rooms, and that the new all-gender restroom, and the south weight room could all be

reopened, which they were on the 7th. Surface tests returned detectable amounts of asbestos in two dust samples collected in the office, but tests determined that there was no active source of asbestos.

The lobby and office were kept closed until early February to facilitate thorough cleaning. Some items, such as the climbing rental shoes, were too difficult to clean and were replaced. Asbestos-containing building materials do not pose a threat to safety; only when the asbestos fibers become airborne and are inhaled there becomes risk of lung cancer, mesothelioma, and asbestosis.

## Decarbonization

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Caltech is only supporting additive installations to flatten the supply curve that will explicitly expand PWP's carbon-free energy supply and thereby eliminate any concern that clean energy bought from PWP may shift Caltech's emissions onto

**Caltech's infrastructure is not ready for overnight electrification.**

In addition, Caltech's infrastructure is not ready for overnight electrification. The holdup is mainly due to the efficiency of the cogeneration plant. Because campus heating is a by-product of its energy production, the electrification is not straightforward. Converting from steam to hot water is a daunting engineering task requiring massive investments in new heat exchangers, piping, and thermal storage. Caltech's sustainability office is searching for an engineering firm up to the task yet it will likely be years until this transformation will occur.

The energy distribution problem among daily use is also studied on campus by sev-

eral labs including [Steven Low and Adam Wiernan](#) who contribute extensively to Caltech and Pasadena's sustainability efforts. Among their efforts is the integration of a smart grid including smart thermostats, motion detectors, and organized EV charging.

The last mile problem also applies to our energy use. Whatever tertiary carbon is generated by fertilizer for landscaping or gas guzzling cars for commuting, Caltech may buy carbon offsets to meet the broadest and most difficult to manage of the [scope 3 emissions](#) categories.

Unlike Caltech, many universities have implemented timelines on when they expect projects to be completed. All University of California (UC) schools are expected to buy external [carbon free energy by 2025](#) and make drastic internal reductions by 2030. UC Berkeley has a similar cogeneration plant as Caltech and a similar plan to electrify heating and cooling is expected to have its [system up and running by 2028](#) and fully connected by 2030.

Despite Caltech's long path to decarbonization, its infrastructure should be sustainable for many years to come while providing the next generation of researchers the tools they need to change the world.

## Reflections on 1 Year of Tech Editing

Michael Gutierrez Editorial

Hey friends! It has been a year since I published my first issue as *Tech* editor. And boy, has it been an eventful year.

I chose to step into this position for the same reason that I make a lot of decisions: it seemed cool and no one else was going to do it. And let me tell you: I understand why. It takes so much work in order to do it right. The managerial role is hard enough as it is; especially because a large part of the job is vying for the attention and free time of, well, Caltech students. I still haven't completely figured it out. And then there's the journalism aspect of it. Patience is a major virtue in journalism, and patience is something that not many of us have in today's instant gratification addicted society. It would be so much easier to publish clickbait garbage and inflammatory stuff that hasn't been researched just to fill the pages or get a rise. But sometimes the only alternative is to not publish anything, or push the story back yet another two weeks.

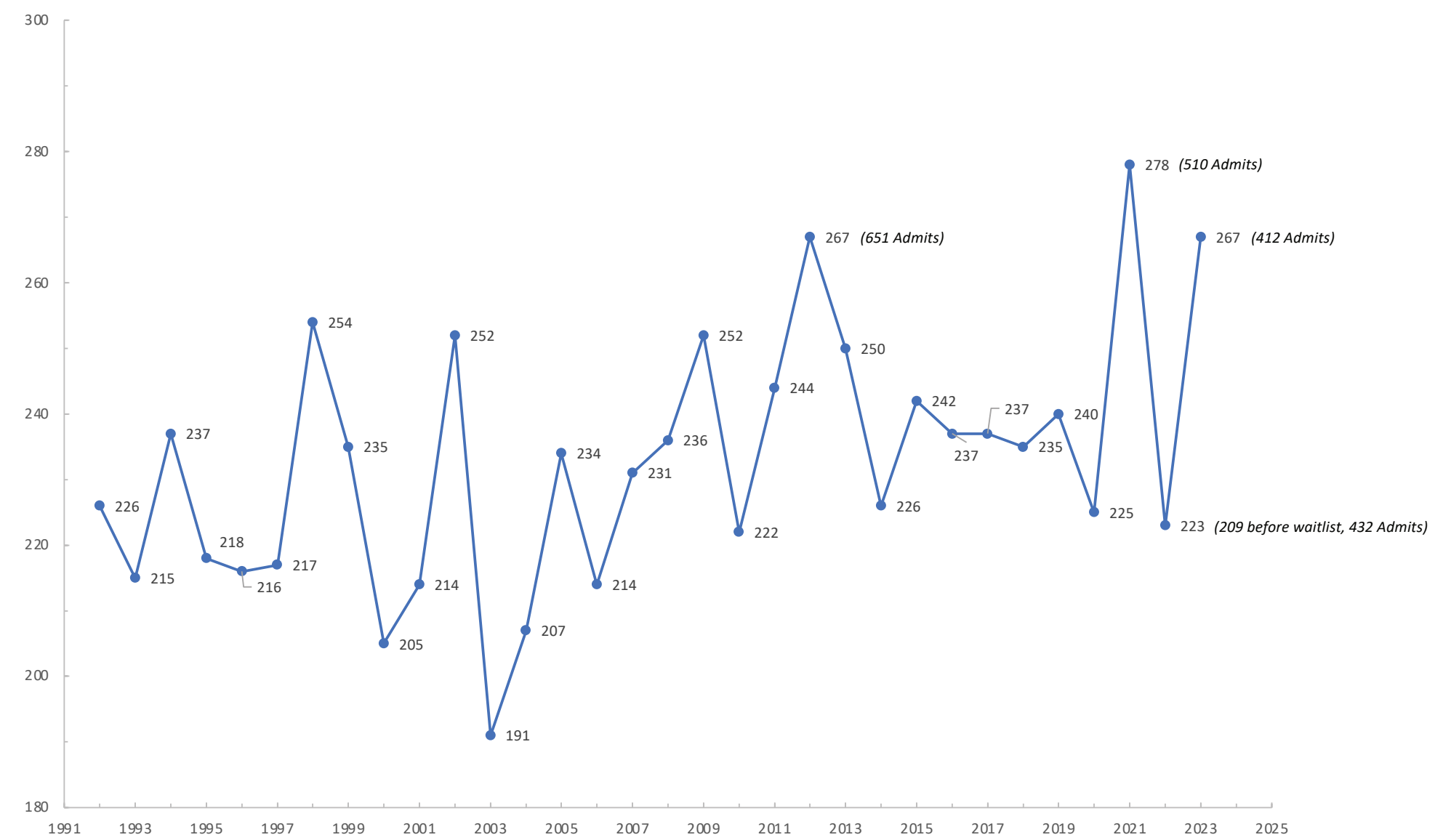
A lot goes on a Caltech — A LOT more than any one person can keep track of — and there are easily at least seven topics at any given moment that are stuck in that excruciating limbo between “why aren't people talking about this? we need to print something about this now!” and “I sure as hell don't have time to research this, and

continued on page 9

## Regular Decisions Acceptances – continued from page 1

Figures courtesy of Professor Jared Leadbetter, faculty chair of first-year admissions

### First Year Class Size: 1992 to 2023



# The MACH 33 Experience: Aubrey Clyburn's AXIOMS

Damian Wilson Culture

“What if we could prevent miscommunication, heartbreak, and social isolation simply by cracking the universal human code? Mathematics is, after all, the language of the universe, and aren't we stardust? Carbon-based? Aren't we numbers, too?”

So ruminates protagonist Eliza in her “apartment-slash-mind palace,” the appropriately heady setting for most of Aubrey Clyburn's *AXIOMS*: a theatrical exploration of number theory, neurodivergence, and the psychoemotional tyranny of talking stuffed animals, among other things. With a cast and crew comprised of people in and around the Caltech/JPL community, the play was developed into a staged reading performed as part of the MACH 33 theater festival earlier this month.

The script, one of three chosen by Directors Brian Brophy and Arden Thomas among seventeen submissions, was deemed a shining example of a “science-driven” play; i.e., a piece of theater that makes science “feel more alive, exciting and tangible” by enhancing “our emotional response to science and scientific inquiries.” Particularly as someone involved in its production, I can't overstate the marvelous extent to which *AXIOMS* puts these Caltech-theatric virtues on full display. (My roles, I'm so privileged to say, having included one of the psycho-torturous stuffed animals.)

After selection, each piece was then assigned a science mentor, director, and cast with whom to prepare a reading. The other two pieces, as sad as I was to miss them, looked wonderful: titled *FIVE DEGREES ABOVE POLARIS* and *S P A C E*, they followed a female astronomer in an ideological brawl against the Catholic Church and the semi-historical adventures of thirteen exceptional female astronauts, respectively.

For Aubrey Clyburn, part theater nerd and part math aficionado, this strain of STEM-driven art embodies the empowering union of two seldom put-together passions. “Well, you have this theater major and math minor. What if you wrote a math play to put those together?” queried her mother during the fateful conversation that would later prove *AXIOMS*'s origin story. The math-oriented nature of the play did initially give her some anxiety about its appeal, as Aubrey shared with the author: “Are people going to respond to this? Or are they going to hit a wall as soon as they hear ‘associative property?’” And yet, though a Techer is unlikely to be the kind of person repelled by axiomatic math, I'm far from the only one who would attest to the play's emotional resonance.

For Adela Paez, who played Eliza in the reading, *AXIOMS*'s mathematical references were far from its most striking element: “To me, what spoke to me first was the loving relationship [between Eliza and her best friend Blaise]. ... Math



The staged reading took place in Frautschi & Mie Rehearsal Hall on March 1st. The cast, from left to right: Molly Goldstein, Wendy Worthington, Adela Paez, Peter James Smith, and the author. Not pictured, though he was essential, is stage manager Eric Han. (Kevin Delin)

came third, you know? That all came last to me.”

Kevin Delin, the physicist, writer, and multidisciplinary extraordinaire who directed the reading, speaks similarly of his experience: “There's a very strong human element in this play. ... I think it's easy to stereotype science-driven plays, but this was a real play about human beings, and it was told in a sensitive, unique way with humor.” May the MACH 33 festival be a monument to how science and art are not at all irreconcilable, but rather convergent toward a holistic exploration of what it means to be human—at least given the writing, acting, and directing needed to make that happen. (“I could not have found a more perfect director.” Aubrey stated of said extraordinaire.)

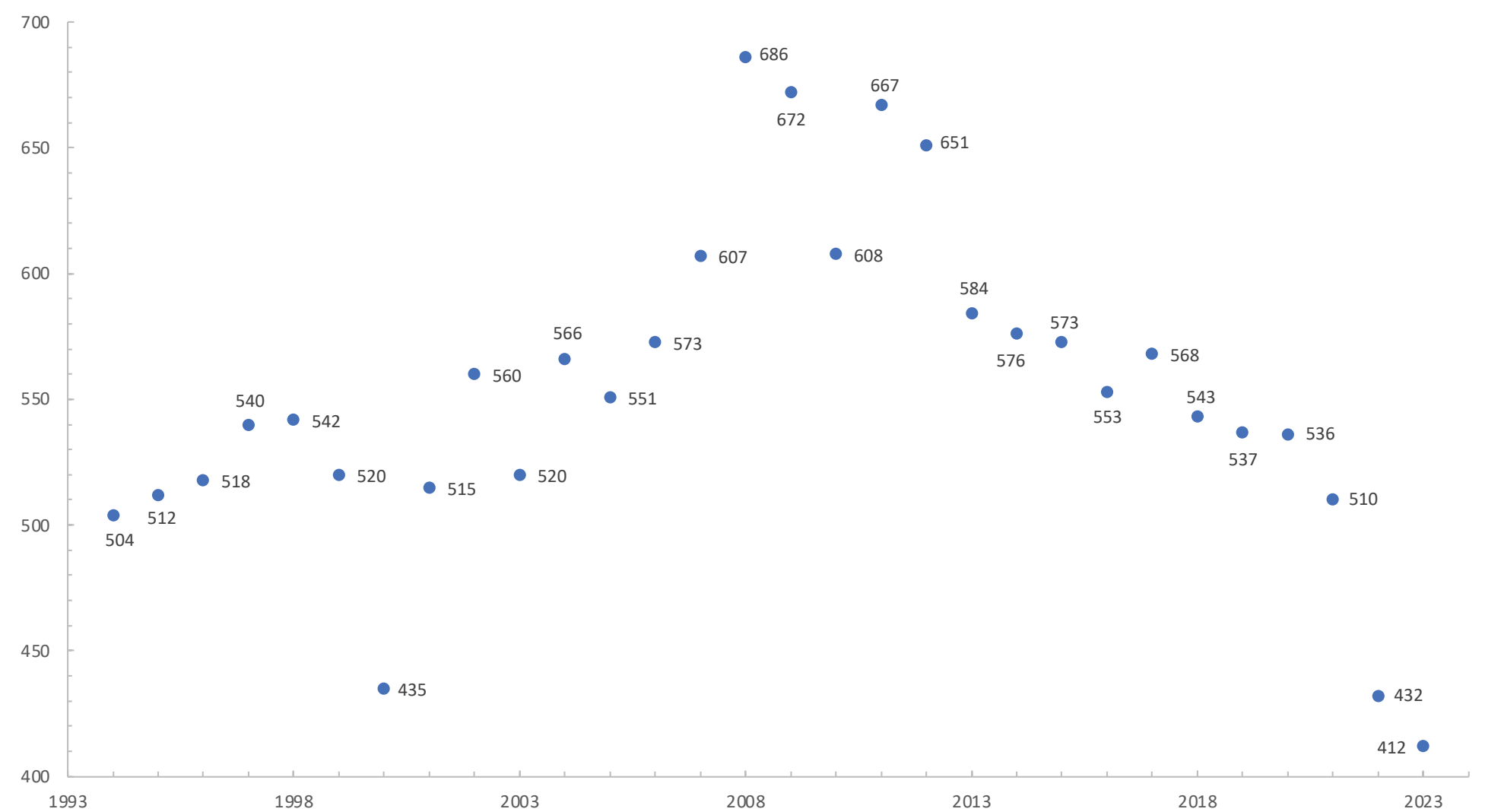
Given the play's premise, onlookers may assume what scientific mentorship provided was mathematical. Rather, the mentor assigned to *AXIOMS* was Brenna Outten, a graduate student studying human emotion and social cognition at the Adolphs Lab. “They reached

out to Adolphs because they know he studies emotions, and my lab works with a lot of people with autism,” she explained. Through Brenna's input, Aubrey was able to further refine the play's depiction of neurodivergence and, more broadly, the challenges of being a human among humans. The final draft of *AXIOMS* thus had that much more of an emotional impact on its audience, and its viewers that much more seen. This was certainly evident in the post-show talkback, as well as in the experiences of the cast. “It opened me up to how I talk about my sister, who has Down syndrome,” Adela remarked. “I know that [we see things differently], but this play helped me see that even more: that I need even more patience, and to help her a lot more than I do in realizing that, sometimes, I take our relationship for granted because we're sisters who see each other every day.”

As much as I would love to see the play attain the Broadway fame that it deserves, the future of *AXIOMS* is currently

uncertain. “Some of that is at the whims of the theater gods,” Kevin said. “We would like to see this be picked up by a theater, and eventually it will get enough reads and it will be. ... The important thing with any art is that you keep going up to bat.” The perseverance, enthusiasm, and sheer talent of people like Kevin, Adela, and Aubrey make me, at any rate, all the more passionate about doing theater at a place like Caltech. Far from being suppressive of or discouraging toward art, the STEM-driven culture of an institute like this one can instead be conducive to an entirely new paradigm of artistic expression, one that sees mathematical logic, love, and autism as component parts of a beautiful whole. It's a spellbinding phenomenon that speaks to the basic reasons we stage anything at all. And, as Kevin sagely put: “The magic of theater—it's transient. You miss it when it happens, and it's gone.” Let this article be a reminder not to miss the next one.

### Number of Admits by Year (1994 - 2023)





# Today in Tech history... March 12, 1999

The California Tech

NEWS

March 12, 1999 3

## The Outside World

by Cheryl Forest and Tech Staff

**BELGRADE, YUGOSLAVIA:** "Yup, they're still fighting." A second of peace talks are scheduled to begin in France this coming Monday, but most officials involved in the current round of peace discussions don't anticipate that the fighting will end because of this conference.

**BOGOTA, COLOMBIA:** The bodies of the three Americans believed to have been kidnapped last week by Colombian rebels were discovered last Friday in western Venezuela. In the past week, Colombia's left wing FARC (Revolutionary Armed Forces of Colombia), a Marxist rebel group responsible for 60% of Colombia's 2,000 annual abductions, has claimed responsibility. Supposedly, "Commander Gildardo," a low-level guerrilla ordered the murders, but the Colombian government is asserting that this man is being used as a scapegoat for German Briceno, who is the brother of FARC's second in command, Jorge Briceno.

**EAST TIMOR:** The East Timorese people will soon have the opportunity to vote on a plan offering them "wide-ranging autonomy" within Indonesia. East Timor is a former Portuguese colony that was invaded by Indonesia in 1975 and was annexed a year later. If the people reject the autonomy vote as is expected, Indonesia will offer the country full independence.

**WALPORT, OREGON:** The wreck of the New Carissa was sunk on Thursday was sunk by a Navy destroyer after firing over 70 shells into it. The ship ran aground off of Coos Bay on February 4th of this year, and has been spilling oil there since. Six hundred dead birds were found nearby.

**REDMOND, WASHINGTON:** On Wednesday Microsoft acknowledged a security flaw in Window NT that could allow a person to gain superuser privileges. Microsoft hopes that a patch will be available by the end of the week.

**DEATHS:** Justice Harry S. Blackmun, who will be best remembered for his role in the historic Roe v. Wade court decision, died last Friday. Stanley Kubrick, the prolific and groundbreaking film director, died last Sunday. Joe DiMaggio, the Hall of Fame baseball player, died last Monday.

## CULTURE SHOCK

by Cheryl Forest

**Auditions -TACIT "The Trojan Women" by Euripides** Friday, March 12: 7:30 p.m. Saturday, March 13: 2:00 p.m. Sunday, March 14: 2:00 p.m. Dabney Lounge Contact Shirley Marneus at 396-6259 for more information.

**Pilgrimage Across Europe** narrated by William Stockdale Friday, March 12, 1999 at 8:00 p.m. Beckman Auditorium Spend a summer and part of the fall with a couple following their secret star on a pilgrimage that takes them from Wales to Romania, and finally to Portugal. This event is part of the Armchair Adventures Travel Film Series.

**Boys of the Lough** Saturday, March 13, 1999 Beckman Auditorium This Celtic quintet represents the rich musical heritages of Ireland, England, Scotland, and the Shetland Islands.

**The Kalichstein-Laredo-Robinson Trio** Sunday, March 14, 1999 at 3:30 p.m. Beckman Auditorium. The group will be performing: Haydn's Piano Trio in A Major, Hob. XV:18; Ravel's Piano Trio (1914); and Brahms's Piano Trio No. 1 in B major, Op. 8.

**Ladysmith Black Mambazo** Friday, March 19, 1999 at 8:00 p.m. Beckman Auditorium The South African a cappella group who made an impression on the world singing backup on Paul Simon's Graceland album.

## From the Dungeon...

"Calling People Trash: A Macintosh Computer's Psychological Problem"

My first face-to-face encounter with a Mac was when, as an undergraduate working late one night in a lab, I dared insert a floppy disk into the slot which I have since come to know as the black slot. When I was done working, I had the perhaps silly pretension of getting my disk back. I looked for an eject button, but alas, without success. After a long while of imploring this computer with personality to return my precious data, I had the good fortune of a passer-by telling me to throw my disk to the trash. "What?! My disk, to the trash?!" Reassured that the trash actually represented me, and that if I moved the disk there it would finally move to me, I hesitatingly did so. Bad start: any computer who calls its user trash has a serious psychological problem. But then again, who doesn't have a psychological problem, and so I learned to live with Macs' incomplete command of the English language.

But last week, the psychological problem went physical, and became real impotence. My Mac was having a bad day, and decided not to load the operating system. "Fine", I said,

'could I just have my disk back?' And then I remembered: a Mac does not even remember I am trash if unable to boot. My User's Guide gave the obvious answer: press Shift-Apple-1. My Mac responded with a blank stare. The Owner's Guide was helpless, as was Getting Started. Obviously, ejecting a disk was not a good place to start. Finally, after I had become a Mac librarian, I found a source of disc-ejecting knowledge: the Mac Reference suggested I boot the computer while pressing the mouse button (and holding my left little finger to the back of my head, for luck). This self-evident procedure produced the response that should have by now been as obvious: none at all.

My manual had but one more recipe before sending me to the all-powerful nearest Mac dealer. "Take a pin", it said, 'straighten it and insert it into the tiny hole beside the disk slot until the disk is ejected'. Finding a pin late at night was not trivial, but doable. The real problem was when I found out there was a size mismatch: my 'normal' pin wasn't up to the job, and would not satisfy the black

hole into yielding the promised prize. It took finding a *big strong* pin to do the job. And believe it or not, several hours after I had begun, I finally got my disk back.

So if you ever wonder who invented eject buttons, you know now it was a heck of a smart man (or woman). And you know he or she never worked for Apple. With many software firms discontinuing Mac support these days, it is not uncommon to read about concern for Apple Computer's future. Now you know what Apple's *real* problem is.

And talking about misnomers, one last illuminating fact for all of those lonely Techers out there: look up 'unable to get a date' in Microsoft Word's Thesaurus. Believe me that it's worth it. You'll scarcely believe your eyes when you see how honest Bill Gates can be.

Alex Backer  
alex@caltech.edu

*From the Dungeon...is a column done in cooperation with the Graduate Student Council meant to cover graduate student issues. Alex Backer is a graduate student at Caltech.*

## The California Tech

### REPORTERS & COLUMNISTS WANTED

Calling ALL members of the Caltech community – not just undergrads. *The California Tech* is the voice of the people, and we need you to speak!

Visit [tech.caltech.edu/write](http://tech.caltech.edu/write) (or QR Code)

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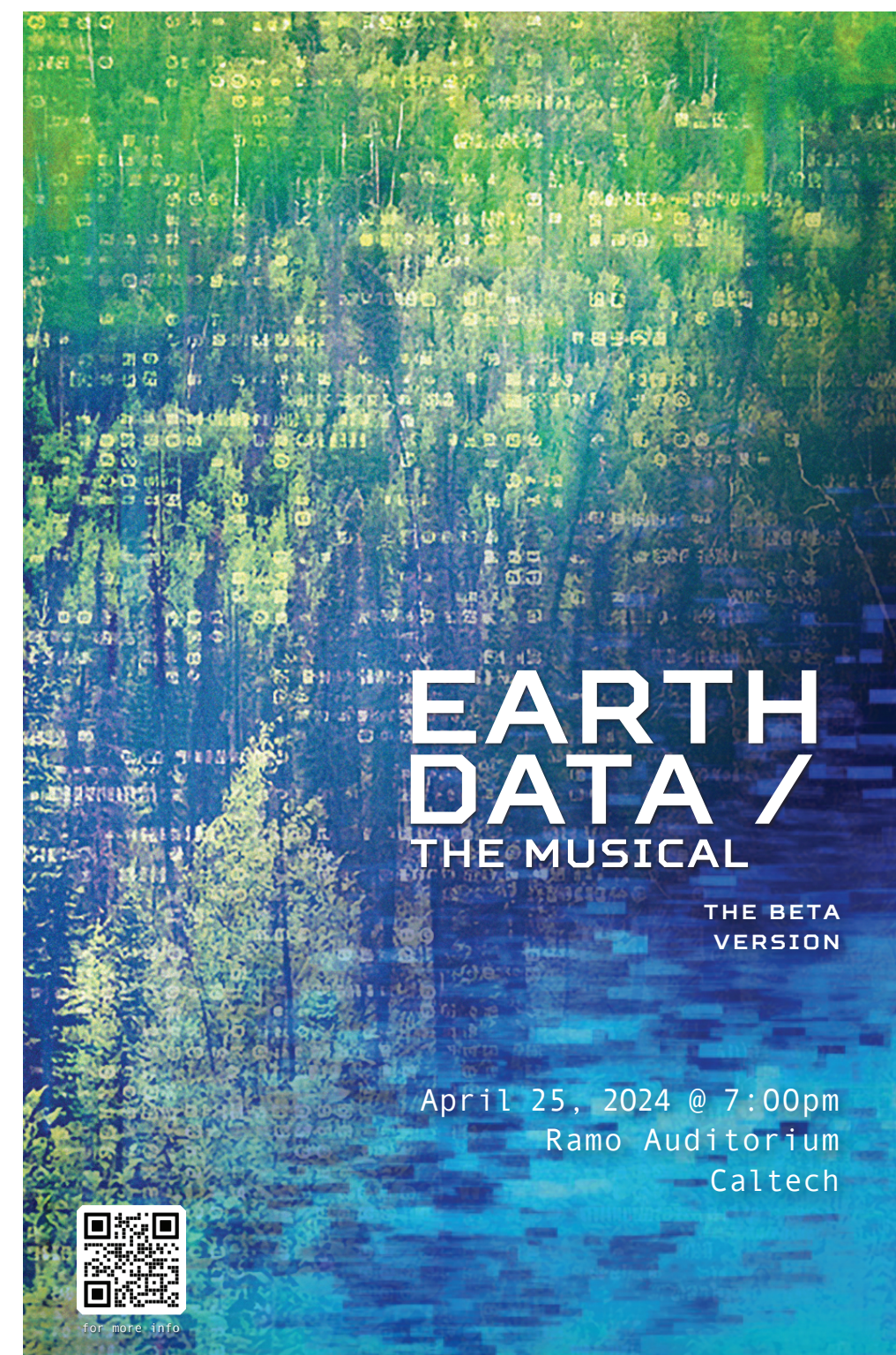


oh god how did i get here i am not good at communicating thoughts and feelings in a healthy and effective manner



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**EARTH DATA / THE MUSICAL**

THE BETA VERSION

April 25, 2024 @ 7:00pm  
Ramo Auditorium  
Caltech




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## The Tech is hiring a new Business Manager...

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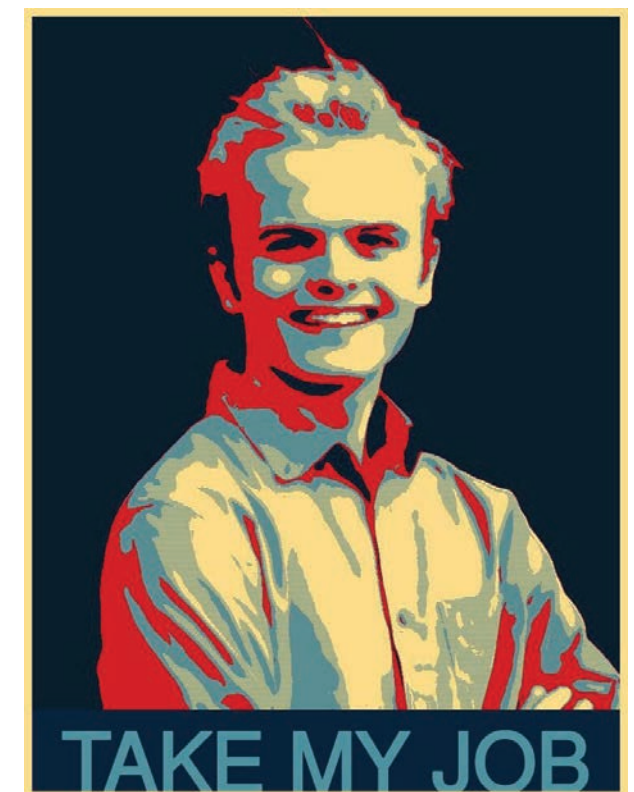
- Sell advertisements
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- Generate payroll invoices and submit to procurement office
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\$75 per issue

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4-6 hours per week



Interested? Email [tech@caltech.edu](mailto:tech@caltech.edu) describing your interest, and attach CV.



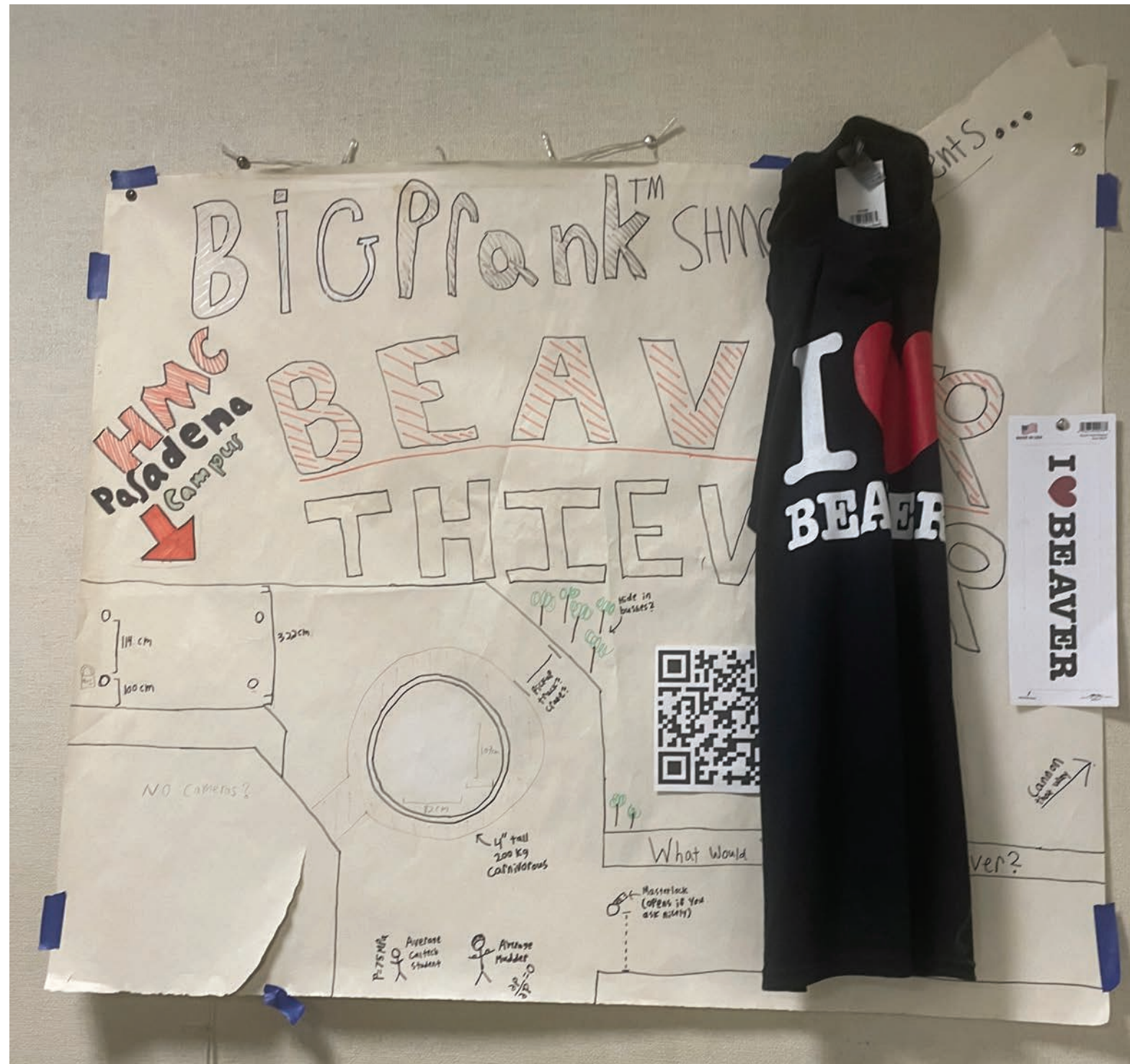
# Leaks Reveal ~~Caltech's~~'s Secret Plans to "Thiever" Bernoulli the Beaver Statue

Michael Gutierrez  
Humor

The *Tech* recently received an anonymous tip warning of a secret plan by ~~Caltech's~~, which may already be in progress, to steal the Caltech Beaver. Very little is known about ~~Caltech's~~; all attempts by *Tech* reporters to ascertain their true identity seem to be met with a powerful amnesiac force. The only piece of evidence that was approved for print by Caltech's Infohazard Repression Bureau (IRB) was a photograph of a bulletin board detailing what appear to be the fruits of a reconnaissance mission. It is currently unknown whether ~~Caltech's~~ agents have already infiltrated the grounds of the athletic department, or whether there are spies among us. One source alleged that a theft had already been attempted, but it had failed since ~~Caltech's~~ didn't know the statue was attached to a buried foundation.

The bulletin board in the photo, displaying a crudely-drawn aerial view of the entrance to Braun Gym and the courtyard surrounding Bernoulli the Beaver à la Kevin McCallister, contains centimeter-precision measurements of the distance between the bollards at the courtyard entrance. Presumably this was to determine the feasibility of bringing a truck or crane up next to the statue, as is scrawled sideways in black sharpie. The designers of this bulletin also seem to be obsessed with beavers in general, as deduced from the presence of the I ♥ BEAVER t-shirt and bumper sticker.

In conclusion, I believe I speak for the whole Caltech community when I say: y'all can have him!



## Dear esteemed Editor of the California Technological Newspaper Establishment,

Don't you remember the magical feeling you felt in your tummy when you first locked your gaze with Bernoulli the Beaver? That instant trauma-bond connection you felt as your eyes lost focus to match his 'Far-Away Stare'? I remember the naming contests like it was yesterday, when the idea of our bronze protector was birthed by the Athletics department's craving to spend excess donation money on a quirky endeavor.

Ever since, our school pride has shot up! We even started a football team whose games we ALL go to every Friday to cheer and sing! (In addition to all the existing sports teams whose games we ALL attend to cheer and sing!)

Oh, the American college experience, how we've missed you.

But,  
It seems we're not special.

Some particularly self-disfigured stick figures have begun a scheme to win him over.

Not on our campus I say! Although we were all sussed out by our beloved bulbous metallic mascot at first, the stockholm syndrome he embodies has grown on us. He is what we think of when someone mentions the word Caltech.

I feel that I can speak for many of us when I say we have dreamed of building a shrine dedicated to Bernoulli and his beloved twigs. (oh... the twigs... so long and thin...)

BUT NOW, this stands at risk. Everything we've been through, a year (?) down the line!

How could this happen? IT'S ALL BECAUSE OF THE MUDD HOMEWRECKER CONSPIRATORS

To be honest, now that I've had a chance to wallow in mourning and remove the orange tinted heart-shaped glasses bestowed unto me by our once cherished Bernoulli, I've had a chance to realize that... you know what... THEY can have him!

It's time that we start prepping for Hot Techer summer.

We will stand by and watch the tea unfold with a Red Door TBA in one hand, and a problem set in the other, unbothered and free.

It is therefore that I cordially invite the Muddy thieves to do as they please. In fact, I encourage it.

See you soon!

XOXO,  
@therealcaltechedu

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## A Photo Column

By Gabriella Twombly and Ankita Nandi



CriminalSquirrel



ME72 Competition



State of the City



Given our recent weather, the dude with the red door umbrella

## Arts Guild Debut: Wine\* and Cheese Night

Sascha Goldsmith  
The Inside World

We're not just a STEM school! On Valentine's Day (February 14th for our unfamiliar Tech-ers), the Caltech Arts Guild hosted its debut event Wine\* and Cheese canvas painting and origami night hosted in the Blacker Hovse dining hall. With over 70 attendees over the course of the evening including grad students and undergrads alike, at least 10 pounds of cheese in addition to other consumables were vanquished. After the successful night, the club has since gathered more funding to continue to host an additional 2 art night events on campus. Keep an eye out for the announcements next term!



## Pasadena Mayor Victor Gordo Gives State of the City Address at Caltech

Lilia Arrizabalaga  
News

Pasadena recently had primary elections and re-elected Mayor Victor Gordo. Not long before, he gave the State of the City address on February 29th at the Cahill Center for Astronomy and Astrophysics here at Caltech. The State of the City speech highlighted many of the city's accomplishments and victories over the past year.

The theme of the talk was "Leaping into the future", and to this end the city is on track to be carbon free by 2030. The city is also reclaiming the 710 highway stub between Union Street and Columbia Street, turning it into a blended space, a step away from car-centric infrastructure.

Pasadena has also come out of the recession fairly well off, with profits from the Transient Occupancy Tax (a tax on hotel stays and short term rentals) returning to pre-pandemic levels. In addition there has been a shift on people primarily staying during the weekdays, such as for work travel, to mainly staying during the weekends, evidence of a booming tourism industry, highlighted by Pasadena being included in the New York Times' list of 52 places to visit during 2024.

The City Attorney / City Prosecutor's office staffed the community police oversight commission and managed the release of the independent police auditors first public report on use of force investigations. In addition, they helped defend the Charter H amendment establishing rent control. They

also conducted community training on trauma informed care.

The Fire department responded to over 21,000 calls for service, the majority of which were medical. They implemented an additional 6th rescue ambulance and purchased 4 new electric bicycles.

Mayor Gordo emphasized the city's dedication to housing, stating "1,701 of the 1,986 units built in the City during the last four years—over 85%—have been affordable housing units." 10% of Pasadena city residents now live in affordable housing. The Housing department permanently housed 148 households and opened Pasadena Studios, a 180 unit micro-unit project that is 100% affordable for extremely low and low income persons.

34% of hires to the city government were Pasadena area residents and 15% of all Pasadena City website traffic was from Pasadena. The library system added over 225,000 items to their collection, both physical and digital. They are also working on seismic retrofitting for the Central Library and aim to be complete by 2025. The library helped support the community in various ways including providing passes to state parks that could be checked out and having free vaccine clinics.

The Parks, Recreation, and Community Services department opened a new pool, the John J. Kennedy pool which will provide year-round aquatic programming. The public works department removed over 11,500 incidents of graffiti, around 2,000 of which were

proactive incidents. They were also awarded the Tree City USA award and Tree City Growth award.

The police department received over 91,000 calls for service and used de-escalation techniques in 463 incidents. The police department faced some recruitment challenges and intensified their hiring efforts. They are acquiring THC detectors as well as a new DUI trailer. With a budget of 99 million it has the second highest budget of all the city departments, with Water and Power beating them with a budget of 333.5 million.

The public health department investigated over 3,000 cases of COVID-19 and distributed over 3,000 tests. They helped administer covid and flu and mpox vaccines. They also provided meals, showers, and laundry services to people experiencing homelessness. The public health department played a crucial role in the response to Tropical Storm Hillary, providing emergency shelter for many experiencing homelessness. In October, the PPHD reported the first locally-acquired case of dengue virus in California. In response they conducted door to door outreach about reducing mosquito populations and preventing mosquito bites.

The Transportation department resumed pre pandemic service levels for Pasadena Transit and Dial-A-Ride, serving over 1.1 million customers. They also made several key steps to zero-emission transportation.

## Reflections

continued from page 2

zero out of 987 undergraduates have responded to my email pleading for help!"

But giving fair coverage to a story is always worth the extra time, in my view, and I intend to keep doing so to the best of my ability, despite the seemingly unwavering disapproval of some of our administrators.

In case you haven't heard my rant about this, my goal with the *Tech* has been and will continue to be to increase communication between disparate corners of campus. I firmly believe that a majority of conflict and interpersonal drama has miscommunication at its core. For whatever dumb reason, it is very difficult in this society to get across what you're really thinking and feeling, ESPECIALLY if there's a fear that it might be unpopular. We've run articles on this matter before, but an angle of it that hasn't been captured yet is the crushing climate of fear of retaliation, by the likes of administration, faculty, or otherwise. Maybe I just have an especially clear view of this being editor-in-chief, but it is astounding to me how often people ask me to publish an article or a quote of theirs anonymously, because they're scared of damaging relationships that their success at Caltech depends on. Even for something as mundane as the squirrel email chain controversy on the grad student listserve last fall. For some of the more contentious topics, like criticisms of current residential life policies, I have a hard time finding anyone who will dare to write about them at all. And when I see things like freshmen getting kicked out of student housing during a pandemic because they started and put out a fire, entire House traditions coming to a screeching halt at the hands of one RLC, or emails from administrators telling me

that our reporting has done a disservice to the community, I understand why people are hesitant!

Now, I'm under no illusion that the *Tech* has it very good compared to other student journalism outlets. At another institute, we might have already gotten sued over, for example, the Title IX article series that we published. We're fortunate to have Caltech's generally very helpful and supportive community.

But why, then, are so many people afraid of retaliation from (to name a few that I've heard) the OSE, the deans, the admissions office, the athletics director? Is it reasonable to fear that saying something critical about these groups will get you fired, or booted off the team, or cockblocked from putting on an event, or denied CASS accommodations? I have no idea. If I thought so, I wouldn't be writing this.

Maybe there's a parallel universe where I'm not.

Anyway, I didn't really have a defined direction for where this was going to go. It certainly should not be construed as accusations or allegations from me. I think what I'm trying to express is... frustration. An incredibly broad sense of frustration.

I'm frustrated at myself for taking on too many responsibilities, to the point where I can't give any of them the amount of effort they deserve.

I'm frustrated at my peers for not caring enough; or else, caring too much; or else, not caring about the right things.

I'm frustrated at the "powers that be" for... having power, I guess.

Most of all, I'm just frustrated with society as a whole. It's kinda cringe, ngl.

But hey — we make the best out of what we have. And we have a pretty great community :) Here's to another year of *Tech*!

## When Will This Show End? (*Lessons in Chemistry* Episode 3)

Victoria Davis  
Culture

To recap, I have been writing reviews on episodes of the Apple TV+ series, *Lessons in Chemistry*. Honestly, I don't know why people subscribe to Apple TV+. I've tried watching *The Morning Show*—awful. I watched 93% of the 3-hour-and-26-minute-long movie, *Killers of the Flower Moon*—the most boring movie I've ever seen with the most bland acting imaginable, and then Brendan Fraser appears at the end. *Why?* Needless to say, my time spent watching things on Apple TV+ has been time lost, time I'll never get back.

So here I am to waste your time, telling you about the third episode of *Lessons in Chemistry*: *Living Dead Things*. In the past two episodes, we meet Elizabeth Zott. She's a lab technician with a haunted past—she was sexually assaulted and dismissed from her Ph.D. program at UCLA. But, things are looking up. She meets, befriends, and falls in love with Dr. Calvin Evans. Unfortunately, he dies. Arguably due to a dog who inserts himself into Zott's life and finds a way to get Evans struck by a bus.

In the third episode, does much science happen? No. Of course not. Instead, this episode is from the perspective of the dog, Six Thirty—which

is swimming in a beaker full of frog eggs. Who knew this is how women took pregnancy tests back in the day!?

A small history of women's health care and family planning (happy women's history month!): Apparently, from the 1930s to 1960s, the leading pregnancy test for women involved injecting women's urine into the African clawed frog (*Xenopus*). This test was named the Hogben test after the British zoologist and medical statistician Lancelot Hogben, who discovered in 1931 that injecting frogs with a pregnant woman's urine (which contains the hormone, human chorionic gonadotropin (HCG)) causes frogs to ovulate and produce eggs within 12 hours. Modern immunology pregnancy tests were first invented in 1967, but weren't available for commercial purchase as an at-home pregnancy self-test until 1980. From 1967 to 1980, immunology pregnancy tests had to be conducted by a doctor. In the 1980s, experts expressed concern and petitioned to have the at-home pregnancy tests banned because they feared women would not be able to understand the result or be able to read the instructions.

Back to the episode: Now that Zott knows she is pregnant, and unable to continue her research, she takes a sledgehammer to her kitchen sink. The episode goes through a montage of scenes of Zott dismantling

her kitchen piece by piece. We see her chiseling away at the backsplash and peeling up the counter tiles. Her goal is to build an industrial-grade lab because, as she puts it, she is a "ticking clock." The montage continues with repeating scenes of Zott waking up to her alarm, rowing on a rowing machine, typing on a typewriter, beating meat with a mallet, and doing construction on the kitchen.

The episode ends with Zott being in her last trimester. It's the first time she has been in a doctor's office as she was "hoping it would take care of itself." Her only support system is her dog and her neighbor, Harriet Slone. In the final minutes of the episode, Zott is in her boss's office being fired for being pregnant, as her being unwed and pregnant doesn't look good for the department.

is swimming in a beaker full of frog eggs. Who knew this is how women took pregnancy tests back in the day!?

"I was a coward and hated myself for it"

—Six Thirty, dog from the show *Lessons in Chemistry*



Six Thirty, dog, is voiced by B.J. Novak

Zott exists in a world that now seems foreign, where women aren't people, don't have autonomy over their own bodies, are fired at-will, and don't have authority to conduct their own research. It is astounding how much we took for granted with a single court ruling and never followed through with enshrining in our constitution. Human rights can be stripped away with ease, in a second court ruling, in a blink of an eye. Maybe Zott's world won't soon seem so unfamiliar. Maybe this show won't end. Maybe it will look more and more like our everyday life.

Make sure you vote in November. I hope you won't be swayed by insipid noise, and will perhaps realize there are two Supreme Court seats that will need filling in the next four years...



**Kobe!**

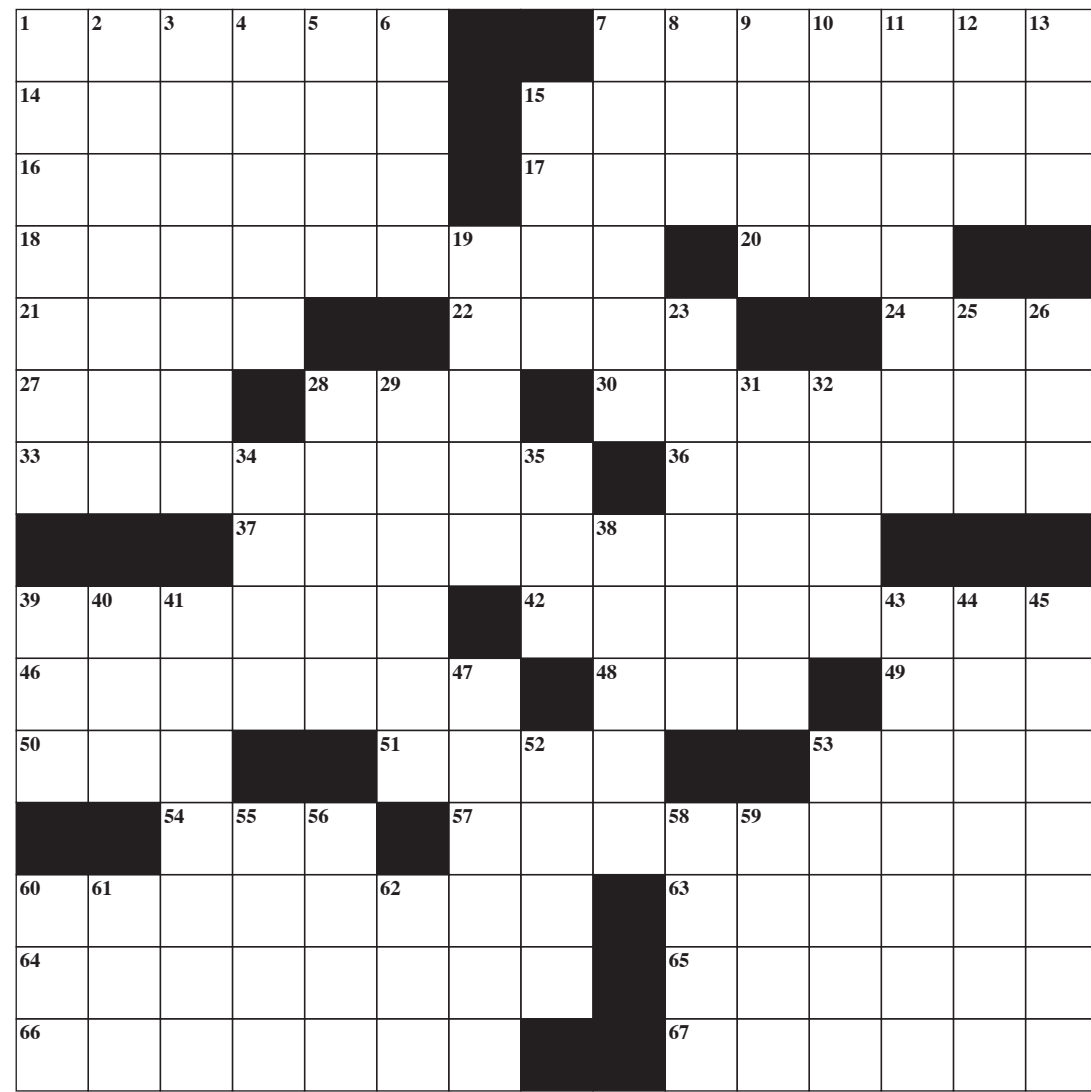
- ACROSS**
- 1 In a functional way
  - 7 Bagel toppers
  - 14 Tough guy Chuck
  - 15 Something bleeped out for television?
  - 16 Before the buzzer
  - 17 Los Angeles suburb that translates to "The Bridge"
  - 18 Dinner at the end of Ramadan?
  - 20 "Charlie's Angels" director, 2000
  - 21 Ancient Cuzco inhabitant
  - 22 Refrain at a service
  - 24 Brit's bathroom
  - 27 Former economic agency
  - 28 JPEG alternative
  - 30 Maze solver's encounter
  - 33 How many people worked in 2020
  - 36 Positive battery terminals
  - 37 Blanket store promotion?
  - 39 Calligrapher
  - 42 Utmost
  - 46 Climbing plant
  - 48 Positive response

- 49 Golf peg
- 50 Masters focus?
- 51 Chiefs coach Andy
- 53 Burn on the surface
- 54 Interface for a music producer, in brief
- 57 Warnings during a robbery?
- 60 Tells a story
- 63 Recyclable tech
- 64 Aggressive donut in coffee action?
- 65 Comic strip frames
- 66 Tournament favorite
- 67 "No need to adjust anything"

**DOWN**

- 1 Person who brings people together
- 2 Sound quality
- 3 Sale of a forged painting, e.g.
- 4 Big name in water filtration
- 5 Branch
- 6 River to the North Sea
- 7 Wet through and through
- 8 Gov. body across the Atlantic

**Madeline Hicks and Enric Adillon**



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- 9 Run-down neighborhood
- 10 One of the Baldwin boys
- 11 Got around at a get-together
- 12 "Lord of the Rings" tree creature
- 13 View
- 15 Ruse
- 19 Patriotic bird
- 23 Google search "Dinner spots \_\_\_"
- 25 United
- 26 Takes too much, for short
- 28 Letter-shaped plumber's fitting
- 29 When repeated, a childish taunt
- 31 Online users posting without signing in
- 32 Columnist Maureen
- 34 'You want a piece \_\_\_?'
- 35 Paycheck abbr.
- 38 Austrain composer Joseph
- 39 Angel dust, briefly
- 40 Time period
- 41 Genre for MC Frontalot and MC Hawking
- 43 Cultural values
- 44 Birthplace of Starbucks
- 45 Having the least fluff
- 47 Fix, as a paper clip
- 52 "Can \_\_\_ you a question?"
- 53 Jackie and Charlie
- 55 Missiles
- 56 Dwayne from the Heat
- 58 French military cap
- 59 Smack, as a fly
- 60 Clock setting in Mount Pearl, Canada
- 61 Athleisure brand for downward dog enthusiasts
- 62 Calendar abbr.

**ASCIT Winter Elections 2024 — Results**

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Evan Portnoi



IHC Secretary

TBD



Page House

Jayden Nyamiaka



Lloyd House

Thando Nkala



Venerable House

Elin Stenmark



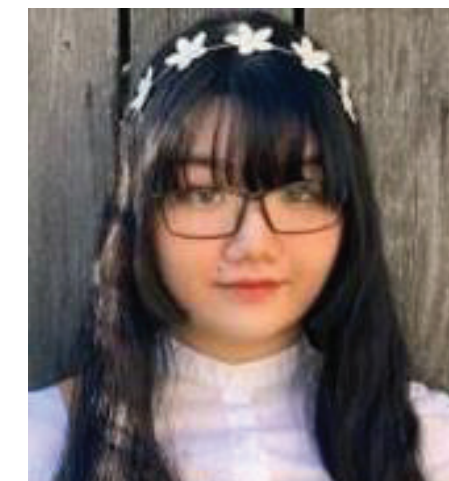
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Avery House

Trinity Lee



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Chi Cap



Ricketts House

Ramzi Saber



Blacker House

Juan Luchsinger

Solution back page

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The California Tech

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All articles shall be clearly and explicitly labeled as either News or Opinion/Editorial. News articles report on topics that have been thoroughly researched by Tech staff writers, and should be impartial to any one point of view.

In contrast, Opinion articles (including Letters to the Editor) may be written and submitted by anyone on any topic; while the Tech will edit all published Opinions to ensure no wrong or misleading information, we do not otherwise interfere.

An exception to this is Editorials, which are written by Tech staff and represent official opinions of the Tech. Any information and sources in Editorials shall be held to the same standard as News reports, but there is no promise or expectation of impartial coverage.

Fair Reporting

All facts of major significance and relevance to an article shall be sought out and included.

If an assertion is made by a source about a specific person or organization, they shall be contacted and given a reasonable amount of time to respond before publication.

Quotes and Attribution of Information

Facts and quotes that were not collected directly by Tech reporters shall be attributed. Articles shall clearly differentiate between what a reporter saw and heard first-hand vs. what a reporter obtained from other sources.

Sources' opinions are just that — opinions. Expert opinions are certainly given more weight, as are witness opinions. But whenever possible, the Tech shall report facts, or at least corroborate the opinions.

Sources

All sources shall be treated with respect and integrity. When speaking with sources, we shall identify ourselves as Tech reporters and clarify why we would like to hold an interview.

In published content, we shall put our sources' quotes into context, and — as appropriate — clarify what question was being answered.

We always ask that a source speak with us on the record for the sake of journalistic integrity. We want our audience to receive information that is credible and useful to them.

That being said, we realize that some sources are unwilling to reveal their identities publicly when it could jeopardize their safety or livelihood. Even in those cases, it is essential that the Tech Editor-in-Chief knows the identity of the source in question.

This also applies for Letters to the Editor and Opinion submissions to the Tech. If the author requests that their piece is published anonymously, they must provide a reason, and we shall consider it in appropriate circumstances.

Corrections Policy

We strive for promptness in correcting all errors in all published content. We shall tell readers, as clearly and quickly as possible, what was wrong and what is correct.

Corrections to articles will be immediately updated on the online version of the Tech at tech.caltech.edu. If appropriate, corrections will also be published in the following Tech print issue.

Honor Code Applies

In any remaining absence of clarity, the Honor Code is the guiding principle.

The California Tech #8 CalGuesser

Every issue we'll show you a different location on campus. Find the place and find the QR code hidden there to sign the log book and win a fabulous prize?!?!

"On campus" is defined by the bounds of the map on caltech.edu/map/campus.

The QR code will be hidden somewhere within the pictured area.



Last issue's winners!

CalGuesser #7 - February 27, 2024

Congrats, you found it!!!

Leave your name/pseudonym, year/department, and date found!

child, 24 bbe, 2/27/24

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tech@caltech.edu

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Solution to Crossword - Kobe!

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